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MAY/JUNE 1989 $3.00

# CB Action

AUSTRALIA'S ONLY CB MAGAZINE

## 27 MHz FM
YES, NO, MAYBE!

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Shortwave Receiver

## ANTENNA RADIATION

## HOW TO QSL 100 PERCENT
How it works

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## RIG REVIEWS:
Uniden 640e AM/SSB
Realistic TRC-453 AM/SSB
Dick Smith D1200 AM
Regency AR477 UHF

## PLUS:
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... all the usual

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# ON CHANNEL

## ACTION IN MELBOURNE

Back in October of last year a well known foul-mouth and major stirrer (who also just happened to be one of the best equipped brain-dead in Melbourne) was visited by some gentlemen from DoTaC who actually arrived while said foul-mouth was currently polluting the air with a string of profanities directed at a young bloke who was on air for the first time.

They made no fuss other than to confiscate all the stirrer's equipment which was, naturally enough, mainly amateur equipment — including a big linear imported from Stateside. Total value of this equipment was in the order of $4,000 — as we said, this stirrer was extremely well equipped with quality radio gear, but, judging by his on air activities, was sadly also a few paper plates short of a picnic.

The DoTaC gentlefolk loaded all the equipment into their vehicle and left the scene with the advice that said brain-dead operator would hear from them within a few days as to when he was to appear in court,etc.

The days passed as also did the weeks and finally months — nothing heard from DoTaC.

B-D operator decided to find out just what was happening and contacted the DoTaC folk to enquire when his case would come before the court, however, DoTaC had no record of the visit to his QTH nor did they have any record of his equipment being brought in nor in fact were they terribly interested.

They did, however, advise him to contact the police which, naturally enough, he was loath to do — and then, in February, the facts came to light.

He was sitting (quietly this time) up on ch 35 when a voice boomed in and, in simple language, explained to him that no, he wasn't visited by DoTaC but by some CBers who had finally tired of his antics.

The voice thanked him politely for his equipment and told him that it was extremely nice stuff and didn't it sound great as that was what the 'voice' was using.

Brain-dead got the message — he had been substantially ripped off !

Now we do not condone theft or vigilante operations and it is highly probable that said 'rip off' merchants might well find themselves visited by the law sometime in the future, but, we must confess that we're not about to lose sleep over this yahoo's loss of equipment.

In fact it gives us a sort of warm glow whenever we think about it.

## IN THIS ISSUE

It's either a famine or a feast with rig reviews — either we're battling to get a couple or we've got more than we can handle. In this issue we review 27MHz rigs from Tandy, Dick Smith and Uniden and a brilliant hand-held UHF from Regency (read Uniden), there's an excellent antenna article, a guide to buying secondhand SW receivers, a piece on 27MHz FM and a report on the New Zealand scene — plus a whole lot more. In all, a pretty good issue — enjoy the read.


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# MOBILE ONE BOOT MOUNTS

## POLISHED STAINLESS STEEL OR BLACK

### *FEATURES*

The Mobile One Stainless Steel Boot Mount is an Australian made antenna mounting system, designed as a substitute for front or rear guard mounting and will fit the bonnet or boot of most vehicles.
The unique feature of the Mount is that it can be installed without drilling any holes.

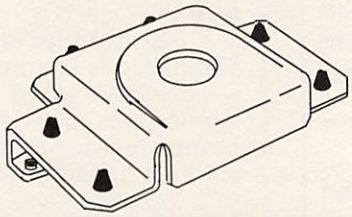
**The following Base and Lead Assemblies can be used with the Boot Mount:**

| | |
|---|---|
| **A12C** | •Light Duty Roof Mount Base, 12 Foot of RG58 Coaxial Cable & PL259 |
| **A3.6** | •Light Duty Roof Mount Base and 3.6 mtrs RG58c/u (Mil Spec) |
| **UL3.6** | •UHF Coax Roof Mount Base and 3.6 mtrs RG58c/u (Mil Spec) |
| **DM12CK** | •Encapsulated Dipole Mount, 3.6 mtrs RG58c/u Coax & Mounting Kit. |
| **SOC** | •SO239 Coaxial Mount. For Whips with a PL259 Termination. |

### *INSTALLATION*

1. INSTALL APPROPRIATE BASE ASSEMBLY ON TO MOUNT.
2. OPEN THE BOOT OR BONNET AND LOCATE DESIRED POSITION.
3. SLIDE THE BOOT MOUNT OVER THE LIP OF THE BOOT OR BONNET.
4. SECURE THE STAINLESS STEEL SCREWS WITH THE ALLEN KEY PROVIDED.
5. RUN COAXIAL CABLE INSIDE TO THE TRANSMITTER AND VSWR ANTENNA.

***AVAILABLE IN POLISHED STAINLESS STEEL OR BLACK POWDER COAT.***



PATENT PENDING No. 77770/87 REG. DESIGN No.99152

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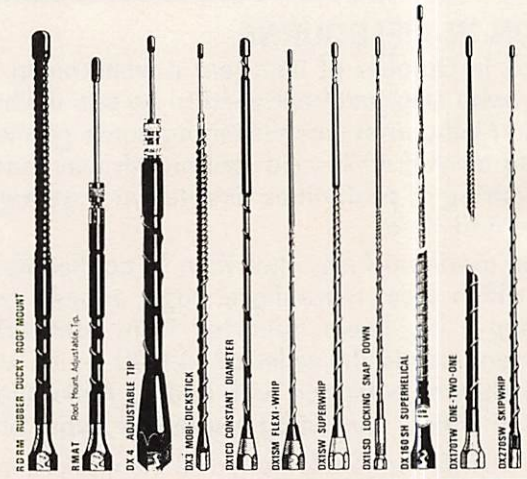
AUSTRALIAN DESIGNED AND MANUFACTURED 27MHz CITIZENS BAND ANTENNAS

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# MOBILE ONE MAGNETIC MOUNT

## MAG12C Mobile Magnetic Mount

The Mag12c Magnetic Mount Assembly has been manufactured in Australia to meet the varying needs of the Mobile User, who requires an easily removable antenna mount for portable applications.

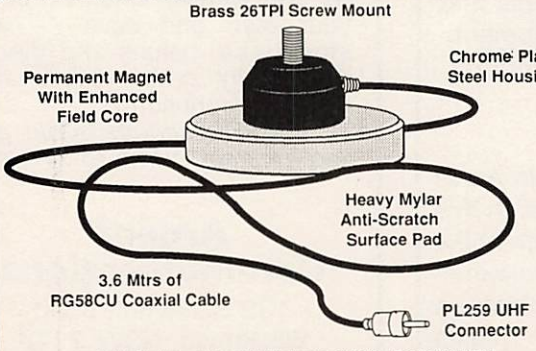
For some time, it has been noted that a need exisedt for a good Magnetic Base Mount that grips the car at up to speeds of 100 kph+ with a 60" (1.5mtr) whip.

Most Australian standard 5/16" X 26 TPI female screw thread whips (to a maximum of 200 grams) can be used with the MAG12C.

All terminations are encapsulated in the Glass Impregnated Nylon moulding of the 'Mobile Dipole Mount' base assembly, (Patent Pending), giving maximum mechanical strength and total weather protection for all electrical connections.

Another feature of this unique mount is the anti-scratch protection pad, made from mylar fibres. It is tough and long lasting, yet will not scratch or damage the paintwork of your vehicle.

**THE MAG 12C MAGNETIC ANTENNA MOUNT**


Brass 26TPI Screw Mount
Chrome Plated Steel Housing
Permanent Magnet With Enhanced Field Core
Heavy Mylar Anti-Scratch Surface Pad
3.6 Mtrs of RG58CU Coaxial Cable
PL259 UHF Connector

Mobile Dipole Mount Assembly Pat. Pending 62198/86 - Reg.Design 100815

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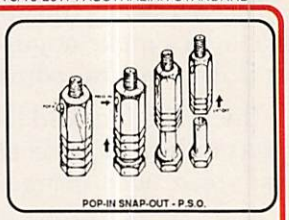
# MOBILE ONE ADAPTOR ACCESSORIES

ALL ADAPTERS ARE DESIGNED TO MATE WITH 5/16"26TPI AUSTRALIAN STANDARD

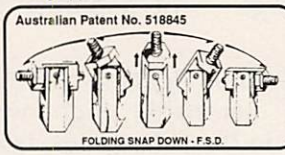
**POP-IN SNAP-OUT**

The Pop-in Snap Out quick release system has been developed for the fast and easy removal of mobile whips from their base mounts. Once the **P.S.O.** has been attached to the base and antenna, there is no need to engage in any more tedious unscrewing to remove it. Just Pop in the button aand the antenna will "Snap" from its uniquely designed locking apparatus.



POP-IN SNAP-OUT - P.S.O.

Australian Patent No. 518845



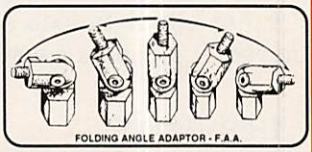
FOLDING SNAP DOWN - F.S.D.

**FOLDING SNAP-DOWN**

TheFolding Snap-Down adapter has been designed to allow the antenna to remain vertical at high speeds, yet when confronted with overhead obstructions, the **F.S.D.** allows the antenna to be folded down horizontally for maximum clearance.

**FOLDING ANGLE ADAPTER**

The Folding Angle Adaptor's ability to fold 180° means that while mobile bases can be mounted at any angle, the antenna assumes the required angle for optimum performance. The **F.A.A.** enhances the performance as well as the appearance of th antenna. Suitable for heavy whips.



FOLDING ANGLE ADAPTOR - F.A.A.

**SPRING ASSEMBLY SMALL**

The Spring Assembly reduces the incidence of impact shock to the vehicle panelling directly beneath the base mount by allowing the antenna to deflect from overhead obstructions.

**SLOPE ADJUSTER**

The Slope Adjuster's ability to swivel enables the antenna to be adjusted vertically for better performance and appearance from a base mount angle of up to30°. Suitable for light whips. Available inChrome *SAC* or in Mat Black *SAB*

SLOPE ADJUSTER CHROME - S.A.C.

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MOBILE ONE
COMMUNICATIONS SYSTEMS

# PORTABLE ANTENNA
## 27 MHz CITIZENS BAND

BECAUSE OF VARIOUS MOUNTING APPLICATIONS, ALL ANTENNAS SHOULD BE CHECKED FOR CORRECT VSWR

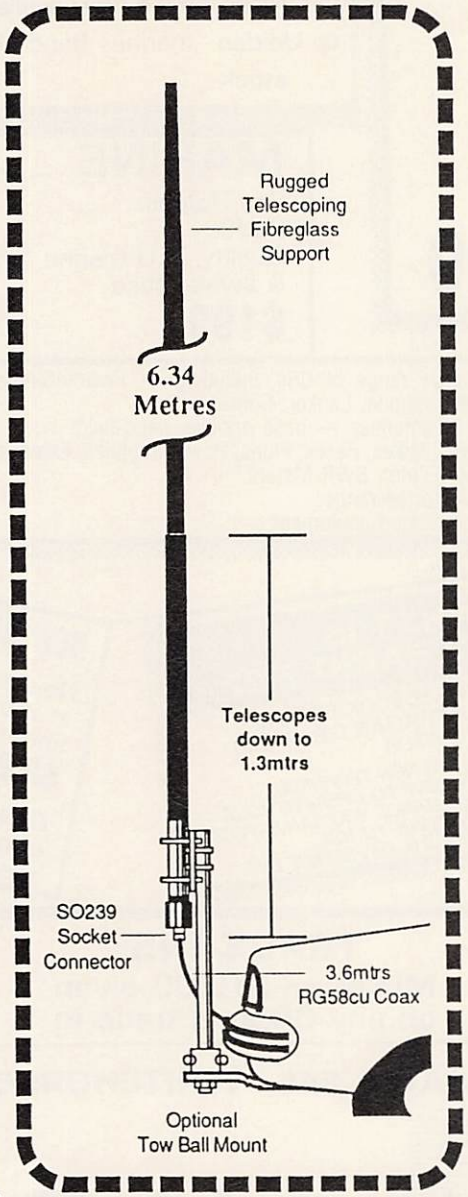
## The best mobile DX signals can be yours!

SC27

# SKIPCHASER

## PORTABLE BASE ANTENNA

PATENT PENDING 1987 • PI • 5580




This is a fully portable, telescopic aerial - easy to transport, erect and operate. It is made from a fibreglass, telescopic pole coated with clear lacquer and has six hollow tubes of different diameters. The overall length, when fully extended is 6.3 metres and, when collapsed in portable form is 1.3 metres. The fully extended telescopic pole is used to support a tuned length of wire between the base-loaded coil and the top section . Therefore the wire is protected from the elements/weather.

### FEATURES

| | |
|---|---|
| TYPE | VERTICAL 5/8th WAVE |
| ORDERCODE | SC27 |
| LENGTH | 1.3 to 6.34 MTRS |
| WEIGHT | 1.53 KILOS |
| TUNING | FACTORY PRETUNED |
| FREQUENCY | 26.5 ~ 28 MHz |
| IMPEDANCE | 50 OHMS |
| MAX.POWER | 100 WATTS |
| TERMINATION | UHF SO239 SOCKET |
| PATTERN | OMNI DIRECTIONAL |
| APPLICATION | STATIONARY MOBILE |
| VSWR | ≤ 1.5:1 OVER 1.3 MHZ |

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PLUS

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FOR REVIEW
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## RIG REVIEW

# REALISTIC TRC-453

**The Tandy Corporation is the largest electronics retailing company in the world and their stores sell a wide and varied range of CBs (both 27MHz and UHF), scanners, shortwave receivers and a multitude of assorted electronic units and components. In our March/April issue we reviewed their PRO34 scanner and in this issue Ken Reynolds reviews their TRC-453 AM/SSB transceiver. In our next issue we expect to be reviewing one of their latest release scanners.**

This unit is a compact 40 channel AM/SSB transceiver with a black vinyl clad case sporting an uncluttered, contrasting silver and black front operating panel. As usual with Tandy rigs the microphone connection is a five pin DIN style mounted on the left hand side of the case.

There are two slide switches on the front panel, one controls the operating mode while the second selects CB or PA functions. A third switch activates the ANL/NB (Automatic Noise Limiter/Noise Blanker) circuits through push/pull mechanism combined with the SQUELCH control knob. Other front panel controls are a combined ON/OFF volume, RF GAIN, CLARIFIER (fine tuning for SSB) and the rotary 40 channel selector switch.

The display panel combines channel display and a row of five individual LEDs to indicate relative signal strength on receive and power output on transmit with a separate round LED labelled TX which illuminates when the PTT lever is operated.

The rear aluminium panel holds the antenna connector, PA and EXTension speaker jacks and a three pin power socket.

### GOOD INTERNAL CONSTRUCTION

Internally the TRC-453 is well constructed with a neat, secure component layout using the absolute minimum amount of 'hard wiring' to maximise reliability. The components are small, lightweight units which only apply small stresses to the circuit board under severe buffeting and vibration of the type experienced in a mobile transceiver application.

On transmit, the TRC-453 performed beautifully with good clear modulation on AM and SSB with the power levels achieved being four watts and 10 watts — this rig has got a lot more up its sleeve — PEP respectively. The five minute AM transmit test produced minimum increase in case temperature and there was no noticeable loss of output power.

If one wishes to speak forcefully into the microphone when transmitting on AM it is possible to drive the transmitted audio into distortion, however, just gentle, average speech sees the rig respond in kind. It would appear that the AM modulation drive is set to impress the 'power mike' set and with a little effort you can drive your rig into overload and get as much distortion as you like. Used correctly, there is no problem and, if you prefer, an internal control can be readjusted by a competent technician to produce a good compromise of levels, however, this is not really necessary.

Frequency stability and accuracy is excellent on transmit, however, our test unit was a whisker 'off' frequency with the clarifier on receive. Just a minor alignment problem and one that we would not expect to encounter all that often.

### AM SENSITIVITY ALSO GOOD

The Tandy receiver was also extremely good with an AM sensitivity of 0.22 microvolts and similar performance on both sidebands.

The 'S' meter indicator gave us one light for 2.5 microvolts, two lights for 5.5 microvolts, three lights for 14, four lights for 65 and the last light came on at 550 micro's which constitutes a fairly hefty signal strength.

Adjacent channel rejection on receive is ok, but, a strong neighboring station can still create a few hearing problems.

### SUMMARY

Tandy's TRC-453 AM/SSB CB transceiver combines compact design with good all round performance in a reasonably priced package. Construction and control layout is good except for the microphone connector position being mounted on the side of the case. Some might favor this position but experience leads us to believe that the Oz market prefers the front panel position.

This CB radio is good value in all respects, however, it would be better value still with a longer than 90 day warranty. Many rigs, and even ones similar to this model, provide a one year warranty — and sometimes even longer.

# PHILIPS FM-620

**$485**

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## RD9

DUAL CONVERSION SUPERHETERODYNE

## POCKET SIZE RADAR DETECTOR

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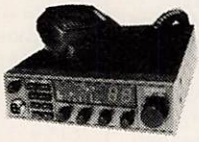
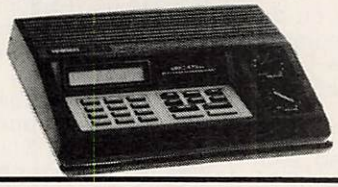


**PRO-540e and PRO-640e** NOW IN STOCK



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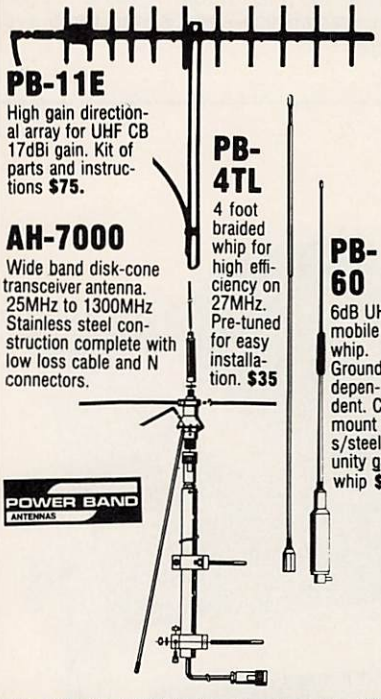

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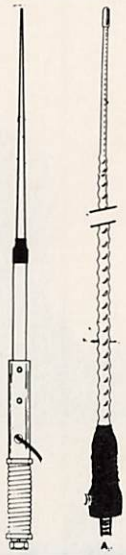

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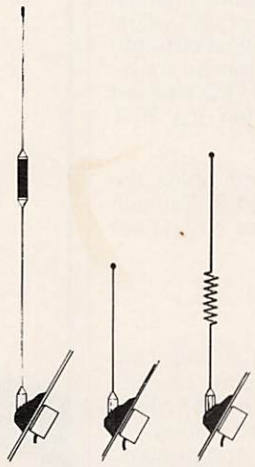

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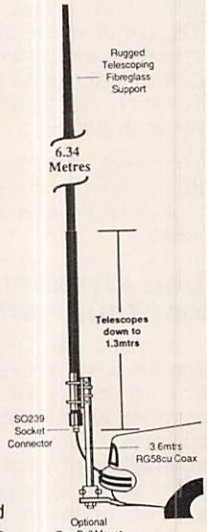


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## DAVID FLYNN LOOKS INTO THE FUTURE AND ASKS . . .

# 27MHz FM–HOW GOOD?

Chasing a story on FM CB is like tracking down a Tasmanian Tiger. You can read all the books and study all the reports, but first-hand knowledge is rare indeed.

Perhaps this is because the use of FM for a 27MHz CB service is still a matter of controversy. And this is because it is largely untried, or just misunderstood.

27FM, as it is best known, is the standard European CB service, and operates in at least as many countries as does our American-derived AM/SSB system. Both share the same 40 channels and an output of 4 watts.

In Australia, the possibility of FM CB remains real, and hangs on a DoTaC decision which may see the replacement of AM with FM, or the end of AM and the continuation of a sideband-only CBRS.

So what's it all about?

To truly understand 27FM, you have to consider the history of the band itself — the rise of 27MHz CB, how it spread from one country to another, and why the issue of AM/SSB vs FM has come about.

### 27MHz — a brief history

Although the American CB service started way back in September 1958, it was only in 1974 that 27MHz CB radio came thundering into the public eye.

In the midst of the fuel crisis, CB caught the imagination of America. It was not only practical, but sheer fun to use. By the end of 1974, there were almost one million licenced CBers.

In the following year, that figure climbed to 2-5 million, with another two million licences waiting to be processed by a government caught totally unaware by this phenomenon.

Towards the end of 1970, an additional million users were coming onto the band every month. And by 1977, 7.5 million Americans — half the population of Australia — were certified good buddies (what a frightening thought!).

The Federal Communications Commission (FCC) had two main problems — an overload of paperwork and the over-crowding of the 27MHz allocation. It got rid of the paperwork by dropping the need for a licence. And it solved the on-air congestion by expanding the 23-channel band, in 1977, to 40 channels — the same allocation we use today.

The FCC also took this opportunity not just to give the CBers more channels, but better radios — or at least ones which would cause less interference to the TV-addicted US public. New technical specifications were drawn up for the 40 channel rigs, increasing harmonic suppression and reducing spurious emissions.

To enforce this, legislation was passed that made it illegal to sell the older 23-channel radios, now hopelessly outdated on every front.

This decision set up a chain reaction, a domino effect, in the spread of CB radio around the world.

**(continued over)**

***First of all, what are the similarities between AM and FM?***

*Both occupy the same amount of spectrum, and so utilise the same channel spacing — typically 10kHz. It is a common but mistaken belief that FM requires more room, no doubt because of the 25kHz spacing used by the 477MHz FM service. But throughout Europe, as we have seen, 10kHz spacing has proven as acceptable for FM as for AM or SSB.*

*Both cost about the same to manufacture equipment for — selling at under $100 for a basic AM or FM — only rig, and from $250 upwards for units with sideband.*

*When AM or FM is used on 27MHz, the possibility of DX is realised, although AM and SSB will always travel the greater distance — something we will examine closer further down the page.*

*At this point the differences appear, with regard to speech and signal quality, interference and range.*

*The quality of an FM signal is, of course, far superior to AM or SSB. The audio is very crisp and very natural — if you have never used anything but 27MHz, then listen to a UHF CB transmission — that, my friend, is FM.*

*This added clarity makes the signal easier to copy, and is one of the reasons why FM has a greater range than AM.*

*Another is that FM is far less prone to suffering from interference. It is totally immune to amplitude modulated noise and static which can intrude upon or totally wipe-out an AM or SSB signal.*

*And instead of the gradual weakening of an AM signal over distance, FM tends to remain stronger and clearer up to a certain point and then diminishes rapidly — which effectively extends your FM range yet again.*

*Combine this with greater overall voice clarity and an interference-free signal, and you have a mode which can out-distance AM and even local sideband coverage.*

*Tests conducted by Sydney's 27FM group some years ago illustrate this. The range of FM was consistently greater than AM — typically exceeding 30km, as opposed to barely half that on AM. Sideband tended to match FM to around 40km, at which point the FM signals deteriorated rapidly, while SSB was weak but still usable in most cases.*

*Although these tests were conducted in far from laboratory conditions, they do prove that FM is not only a viable mode for 27MHz, but is superior to AM.*

*This is just one of the noticeable 'on-air' differences which the FM user can appreciate.*

*With so little intrusion of noise onto a signal, the squelch control (normally called 'mute' on FM) is much more useful, again something which 477MHz operators are familiar with. No constant fiddling with the squelch, just 'set and forget'!*

*'Skip' characteristics of FM may or may not be as welcome, depending on your viewpoint. As the FM signal is reflected by the ionosphere it undergoes a 'phase shift', and changes polarity (eg from vertical to horizontal). This causes severe fading ('phase distortion') or even drop-out at the receiving end.*

*FM can make the distance, though, and many listeners to the upper end of 27MHz have heard FM CB signals from England. The challenge of DX is part of the attraction of 10-metre amateur FM band, at 29.6MHz.*

*If you like to talk skip without effort, FM is not for you. But if you want to work for it, or are tired of having DX stations romp over someone down the road, then you may find FM to your liking.*

*A final plus factor for FM, to which no-one could object, is the reduced likelihood of TVI and similar interference, much of which is caused by amplitude-modulated elements in the signal.*

**Amateur rigs such as Icom's IC-735 are easily converted to cover 11 metres FM.**

# 27MHz FM-HOW GOOD?

**(continued)**

Manufacturers had been churning out millions of transceivers each month, with production geared up to match demand. But after the sudden introduction of the 'FCC forty'', they were left with warehouses full of 23-channel rigs — radios that could not be sold. At least, not in America.

Faced with immense losses (multiply millions of radios by hundreds of dollars and you'll get the picture), the manufacturers developed new markets.

They found that while most countries had no provision for CB radio, there were no laws preventing the importation and sale of the equipment itself. It was illegal to use, but that really wasn't the manufacturers' problem, was it?

This all happened in 1977, and was the kick-off for popular growth of 27MHz CB in almost every country — including Australia — as each became a dumping ground for radios the USA no longer wanted.

Conveniently, the American CB boom began to be replayed in each country — except that CB was only legalised after it became massively popular. And in most instances, when public pressure dictated government action, it led to the adoption (or adaptation) of the system already in use — the 27MHz, 23-channel AM/SSB citizens' band radio service.

This is exactly how the FCC plan became entrenched in much of the western world. The more countries accepted it, the more equipment became available to pirates and the more weight it carried when legalisation came around. 27MHz gained momentum with each stride, and even formed the basis for a standard European-wide CB service — with one small but significant difference.

The Europeans chose FM.

The original European specification for CB was drawn up to provide 23 channels with an output of 2 watts, but using FM only. This was a recommendation by the Conference Europeanne des Post et Telecommunications, or CEPT — an organisation at which the communications departments of all European nations are represented. In a continent where some countries are less than half the size of Tasmania and you can cross a dozen borders in a day's drive, co-operation is important.

The fine print was decided by each nation, so some allowed 4 watts FM and others approved FM/SSB. But the framework was there.

This was improved with the release of CEPT spec TR20-02 — opening up all 40 channels with 4 watts FM. Each member nation has now moved in line with 20-02, and while some retain their former services — using sideband or even AM on the first 23 channels, for instance — 40FM is moving up as the common European CB service for 1992.

Even the UK, which initially chose 40FM channels from 27.6 — 28MHz, now also permits use of the CEPT band, and will review its own allocation in 1990. This is expected to see the CEPT spec adopted and the out-of-step allocation closed down over a period of years.

So how did a CB system from the other side of the world come to prominence Down Under?

## FM CB in Australia

The roots of Australia's 27MHz FM movement go back further than many realise. The mode itself was largely an unknown until the introduction of 477 MHz. Rigs like the Philips FM320 made FM a reality, and for the first time most CBers could experience clarity and noise-free operation which are hallmarks of the mode.

UHF CB quickly developed a loyal following, but there were some who considered the short range and high prices of UHF to outweigh the benefits of FM. Nice mode, shame about the frequency.

Also unveiled in 1978 were the new generation of amateur radios — mighty base stations which were (as is every ham rig until the next one arrives 'the ultimate amateur radio). They had everything you could ask for, including FM.

These new rigs stole many a pirate's heart. They opened up the possibilities of using FM on 27MHz, and although they were too expensive for most enthusiasts these ham radios brought the mode and the frequency together.

The next few years saw FM come within reach of hobbyists, starting with the Comtronix FM80. Designed as an 80-channel mobile for the 29MHz FM amateur band, it also served well on 27MHz. Compact and easy to use, the FM80 was the first popular pirate's 27FM rig.

At precisely the other extreme were the do-it-yourself rigs. Entire printed circuit boards, often with most components fitted, became available from the Cybernet factory. Just add knobs and 12vdc for instant CB radio. It wasn't quite that simple, because not all the boards worked — but enough did for their proud owners to add Cybernet's FM board.

Or you could buy one of the books which detailed FM conversions for the most common rigs, and for the low price of a second-hand AM the job was done. The end result was the same — and 27FM moved into the domain of the experimenters.

Meanwhile, governments around the world were discovering that legalising CB radio didn't eradicate piracy.

One reason was because CB radio had to grow in numbers and popularity before it became bothersome enough to legalise. And 'popular' means newspaper articles, TV news stories and buying rigs across the counter. 'Popular' means people — lots of them, too many for pirates who remember when they knew everyone on the band. Pirates don't like crowds.

On another level, most pirates see any law as a limit, a restriction. Say ''you can do this'', and it must follow that there is something beyond this which you cannot do. Giving them 40 channels simply means that they can no longer use ch41.

Right or wrong, a pirate wants freedom.

So as one country after another legalised CB, they forced the pirates onto new frequencies and, if available, new modes. In solving one problem, they had created another.

This little philosophical exercise was not lost on the lads at Cybernet and Uniden. A problem is just an opportunity seen from the wrong end, they rea-

soned, and their production lines began to churn out new radios which fully exploited modern electronics and the PLL chip — the 120ch, AM/FM/SSB super-rig.

## A 120-channel rig has certain advantages . . .

The first of these to appear on our shores was the Hygain 2795, and they sold like rosary beads on judgement day. Soon after came rigs from Cobra, Midland, Ham International, Uniden and others. And it was these radios that were responsible for putting 27FM into the mainstream of piracy.

In many cases, it was just a matter of convenience. Most pirates were still using heavily modified rigs in which an array of switches, old and new, were used to squeeze out each channel. So changing channels was a major exercise. "Let me see now . . .ch 74, that's 27.740 . . . look up the chart — PA and NB on, switches A and C off, pull out the tone knob and point the rig true north . . . "

A factory-ready 120-channel rig has certain advantages, you see. Neat, easy to use, it even looks like a CB — and no messy wiring or cumbersome digi-scans hanging off it.

So pirates started buying this new breed of radio, mostly for the convenience it offered. That they now had FM was a bonus, and pirates being pirates they used it.

And if you were already into 27FM, the super-rigs were economical. Before the tri-mode radios you'd have to own two rigs — one FM, the other the more conventional AM/SSB. Now you could do it with one.

The final ingredient was the CB boom in England and Europe. The factories were now mass-producing FM rigs for this market, and it was inevitable that some of these would find their way to Australia.

### 27FM — the group

Up to this point, the use of 27MHz FM in Australia had been very isolated. Enthusiasts were scattered among the cities, comparable to the early days of the 27.240MHz pirates.

The first serious grouping of 27MHz FM users on more than a casual 'hello-goodbye' basis was in 1984. It was initiated by 'Tony' (not his real name), who was then and is still today, well known in the CB scene.

**First of the super-pirate rigs — the Hy-Gain V/2795, with AM/FM/SSB across 120 channels — and believe it or not, this advert appeared in CBA!**

Tony told CBA that he already had started leaning towards FM as a mode, irrespective of the band itself, and was naturally curious about combining the high-quality of FM with an inexpensive short-range frequency such as 27MHz.

"I spoke to a few enthusiasts, whom I knew either on-air or through the radio club. And I was surprised to learn that a number of them had the same interest, and a few even had the capabilities or the gear for running FM on 27MHz.

"The radios were actually out there, it was just a matter of looking. I suppose that amongst us we represented just about every aspect of the 11-metre FM movement, which of course was no different to any other form of CB radio. We had the hobbyist-experimenters who could build almost anything, the easy-going social types, and the black-box non-technicals."

Their equipment came from many diverse sources.

"One guy found a French Euro-spec rig in the 'specials bin' at Dick Smith's York Street store, which a buyer must have got as a sample from overseas, and picked it up for around $50. Another knew a CBer whose brother had come back from the UK with a top-of-the-line CB rig as a present. It was totally useless here of course, being 27.6 MHz FM he couldn't receive a thing — and that was bought for $100."

There were one-off imported super-rigs from Japan, like a 120-channel AM/FM/SSB Cobra. And amateur gear — Tony's own unit was a Kenwood TS-660 which gave him the amateur 6m and some HF bands, to which he added 26-27MHz.

**(continued over)**


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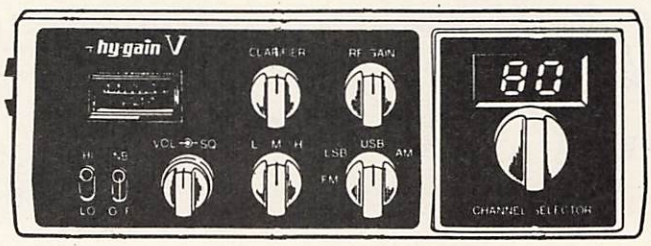


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# 27MHz FM-HOW GOOD?

**(continued)**

"The Kenwood was the quality radio they just don't make for 11 metres. It was low power, 5 watts AM/FM and 10 watts SSB, but there were other ham rigs with real grunt on 10 metres FM, and a lot of these ended up downstairs on 27MHz too!"

## *'27FM was a sort of underground radio network . . . fun and very clique-oriented'*

Tony and the others were keen to get on the air using FM CB, and quickly formed their own fraternity which was simply known as '27FM' — the tag which later came to represent the hobby itself.

"I suppose it was a sort of 'underground radio network'", Tony laughs, "all a lot of fun and very clique-oriented. As well as testing out the mode we had our own private channels, our own special group. We never seriously considered pushing for the legal introduction of FM on 27MHz. It just wouldn't have been realistic to ask the DoC for a tri-mode service, and no-one in their right mind was about to stand up and ask that AM be dumped and hundreds of thousands of rigs thrown out the window!"

Of course, whether the DoTaC was in its right mind when it proposed just that, barely two years later, is another question entirely.

On 20 November, 1986, the then Department of Communications (now DoTaC) quietly produced a press release which proposed the removal of AM from the CBRS.

Now, we're not saying it did this in a sneaky, underhanded way — but the release wasn't sent to CB Action, and didn't feature in any other radio or electronics magazine. CBA staff had heard rumors, but nothing like this — so when they finally had it in writing, they made up for lost time and the resulting cover story was the hottest and most talked-about topic in CB circles for years.

It is worth noting two points. Firstly, that the idea to remove AM was simply a proposal, suggesting that the mode be 'phased-out' over a five-year period — no new AM rigs from mid-1988, and no licencing of these units past mid-1993.

Secondly, nowhere in the press release — or in any other departmental correspondence or discussions up to that point — was FM referred to. The proposal simply called for the removal of AM, leaving CBers with a sideband-only 27MHz service — citing more efficient use of the spectrum and reduced interference to home entertainment equipment and other two-way radio services.

**May European rigs, such as the Team TRX404, are available for both the UK and European 40 channel FM CB services — and have made their way onto Australian shores.**

The Department invited only 'public comment', which CBA made sure it got — and good! So much so that the episode was highlighted in the DoC's 1986-87 Annual Report as an 'extensive public consultation . . . the Department forwarded a media release to over 200 CB radio clubs, CB magazines and numerous interested individuals' (this only happened after it was bombarded with phone calls following the CBA story).

The many arguments put forward against the wholesale scrapping of AM do not need to be fully recounted here. Clearly, AM was seen as the low-cost, easy-to-use part of 27MHz, and in essence was what CB was all about. For the beginner, the holiday driver or truckie, sideband was just not in the game.

As far as the DoC was concerned, there were only two possibilities — get rid of AM, or keep it. Have an AM/SSB service, or sideband only.

The CB Action article advanced the idea that there was in fact a third option — "one that has not yet been addressed at large, yet . . . is gaining some support as a preferred option, a compromise, the best of both worlds." This was the first wide-scale public airing of Australian 27MHz FM.

## *The 'FM option' was widely supported throughout the industry . . .*

There was of course the chance that given a large enough and well-organised negative reaction, the plan to remove AM may be rejected.

But the Department's Director of Public Relations had already stated that "the no-change option is not a realistic one . . . (we) cannot see the CBRS in isolation, it must keep in mind the whole spectrum."

So CBA made its own proposal — all things being equal it would rather stick with AM/SSB. But if we have to lose AM then let's replace it with something that will do the same job but do it better.

The 'FM option' was widely supported throughout the industry, with CB shops and the importing companies coming out in favor of a dual FM/SSB service. Clubs and individuals, many having a knee-jerk reaction against any change, began to swing over for the same reasons.

By the time the DoC had compiled the submissions sent in response to the proposal, a large number put their weight behind the CBA proposal — either retain AM, or replace it with FM.

At the time of writing DoTaC had yet to make its decision, although reliable sources indicate that the battle to retain AM has won. So, not only has the department failed to remove AM from the CBRS, but through its own actions has led to 27FM gaining a high profile and a devoted following — one which intends to stay on the scene.

Understandably, however, the 27FM fraternity is far from keen to publicise its hobby. It doesn't want the attention, either from DoTaC or newcomers to the mode.

FM CBers can be found above and below the 40ch band, although they have no established calling channel. Popular 'net' frequencies and contact procedures vary from one area to another, making it difficult to gain a reliable estimate of their numbers — but there would be at least a few thousand 'regulars'.

Once again, it's very reminiscent of the early days of CB. And you can't help feeling that the 27FM enthusiasts are doing more than pirating — they're enjoying CB in a way that few people have, both rediscovering what CB once was, and perhaps is really all about.

## KEN REYNOLDS (POWERBAND) REVIEWS, "THE ALL GUNS BLAZING"

# UNIDEN PRO640e AM/SSB RIG

**Last issue we reviewed Uniden's latest top-of-the-range AM-only 27MHz CB transceiver...this time it's the PRO-540e's 'look-alike' big brother, the all guns blazing PRO-640e AM/SSB rig...**

It's no coincidence that the two new offerings from Uniden look so similar in appearance — they in fact use the same case and front panel with all the switches and knobs identically laid out.

The color scheme is also identical being predominantly charcoal grey and black with color relief supplied by the brilliant green channel display, the flickering amber, red and green colors of the signal-strength RF indicator and the gentle green backlighting of all the front panel controls.

In fact, the only visible way you might distinguish the two rigs apart is to be sufficiently close to be able to read the different labelling for some of the controls.

Where the PRO-540e offered an adjustable RF GAIN control knob, the 640e replaces this position with a rotary mode switch for AM/USB/LSB and the adjacent TONE control becomes the CLARIFIER. The RF gain function on the PRO- 640e has been sensibly retained, but, is relocated to the press-button keypad and provides 20dB of attenuation in a single step — not quite as flash but it achieves the desired result with minimum fuss — great for procrastinators who can't decide just how much to turn down the RF gain control.

The tone control has been discarded on the 640e which may or may not find favor with the user. Over the years we have observed that a great number of CB operators show a very positive response to the provision of a tone control on AM rigs — technically, it is generally accepted that there is little value in such facilities except in unusual circumstances where for example, the operator suffers from a hearing disability.

As a result of relocating the RF GAIN control the operation to suffer is the noise limiting circuitry and where the PRO-540e offered separate buttons for ANL (Automatic Noise Limiter) and NB (Noise Blanker), the 640e combines both facilities in the one press-button.

We would prefer the rig to have lost the channel 19 priority button and retained the two independent noise suppression controls.

The HI-CUT filter, thankfully, has been retained on the sideband rig. We found it quite useful in removing high frequency audio noise from signals in the 540e — it is in its own way another type of noise limiter or processor.

Having dealt with the basic function changes, a glance at the back panel quickly establishes that things are not as similar as one might at first suspect.

The PRO-540e uses all steel subframe construction where the 640e has an aluminium back panel with the power inlet socket located in a different place.

On removing the covers all is revealed.

Internally the two rigs are totally different and if there was any initial idea that they might be somewhere electrically similar, perish the thought.

Uniden's PRO-640e is based very heavily on the already highly successful PC- 122 AM/SSB transceiver which has been around the traps for several years.

It appears to the writer that the essential transceiver circuitry is in fact identical to the other rig (no schematic was available for confirmation at this stage) except that it has been built on a larger main circuit board to allow room

for the additional circuitry necessary for the increased functions such as VSWR indicator and HI-CUT filter etc...

Internal construction is as we have come to expect from modern day Uniden equipment excellent with main board soldering near perfect and the use of low mass components for maximum reliability.

The VSWR facility is provided by an additional small circuit board mounted vertically at the rear of the rig near the antenna connector. Because of the poor resolution of the LED type display used to read the Standing Wave Ratio, the instrument is not as detailed as most users would like to see, however, it serves well enough to indicate if a serious antenna fault is present.

A minor complaint relates to the press-button keypad.

We found it difficult to distinguish if the key for a particular facility was operating or not without close examination of the panel or by feeling to see if the appropriate key was depressed or not.

The only key that has an indicator light to identify its condition is the SWR button which has an associated LED on the main display panel.

## PERFORMANCE

The first thing most will notice after powering up the rig is that the receiver operates normally without the need to fit the microphone. We find it difficult to understand the reasoning behind the inconsistency of the Uniden PRO and PC series rigs....the PC-122, PRO-540e and PRO-640e all have the receivers enabled without the microphone being connected while other equally new releases resort to the old concept of requiring the mike to be connected before one can even listen.....?

The audio output is a relatively high seven watts which is not much advantage for signal reception, however, the advantage of the extra power makes its presence known when the PA (Public Address) facility is used.

Received audio is quite good and has a bit more 'body' than the PC-122; this is probably attributable to the increased case size rather than any feature of the electronics.

The SQUELCH action is typically good with an opening threshold of less than 0.5 microvolts on AM. It still pays to keep an eye on the level selected because, as with most rigs, turning up the level more than necessary will require a very strong signal to break the silence.

The receiver sensitivity is also typical coming in at around 0.25 microvolts for AM and LSB (Lower Sideband) — it was interesting to note on this particular test rig that the USB sensitivity was noticeably better for some unknown reason...??

The adjacent channel rejection is consistent with the modern CB technology of the better grade receivers but you can still be 'blown away' by a particularly strong signal just a few channels away.

**You could be forgiven for thinking that the 540e and 640e look identical — they do — however, the performance of both is excellent.**

The signal strength required to turn on the first indicator light was 1.7 microvolts, with strength nine coming up at 140 microvolts and the whole Christmas tree illuminated at 520 microvolts — which is a fair sort of a signal to say the least.

Transmitted signal was again typically good with AM outputting exactly four watts and both sidebands performing at better than the legal limit of 12 watts PEP.

We tested the rig on quite a hot day and the five minute AM transmit test warmed up the rig considerably but not enough to be termed hot, while the output power increased slightly rather than decreased.

The microphone gain control provides the complete dynamic range from zero modulation on AM up to well in excess of 100 per cent modulation. The modulation level control operates quickly to rectify the position, however, audio peaks do produce short bursts of over modulation similar to most other rigs.

Too much microphone gain will produce a noticeable harshness on AM transmissions and it would be wise to experiment with the control. We found that anything above halfway was too high. The effect is not easily noticeable on sideband.

On-air reports were generally good except when too much microphone boost was used on AM.

Frequency accuracy on the test rig was good although there was a slight bias of about 100 Hertz towards the low frequency side — nothing to worry about.

## SUMMARY

The PRO-640e is a stylish rig with a well laid out operating control panel other than some shortcomings relating to the on/off condition of the press-buttons on the keypad.

Both transmitter and receiver provide top performance and with the inclusion of a VSWR meter the 640e is a full featured CB transceiver.

Mechanically, the 640e is very strong, but, comparatively lightweight — about 1.5kg. The size of the transceiver is neither compact nor large and fits into an intermediate bracket when compared with the PC-122 and the GRANT.

We understand that the PRO-640e is intended to be a direct replacement for the GRANT, until now Uniden's top-of-the-range mobile CB transceiver. While the PRO-640e is an excellent rig we don't feel that it quite fills the specific notch in the market that the GRANT will leave behind, however, time will tell.

If you are in the market for a top rig the PRO-640e is pretty tough to beat in any respect — but don't expect to get much change out of $400.

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# 89 WORLD RADIO TV HANDBOOK AVAILABLE

**For anyone who enjoys the fascinating hobby of shortwave radio, there is no better way to spend $30 than on a copy of the 1989 edition of the World Radio TV Handbook.**

That most SW enthusiasts simply refer to it as 'The Handbook' is testimony to the continuing success of this broadcasting bible. Now in its 43rd year, the WRTVH is still crammed with enough information to make it the essential SWL companion.

Shortwave radio, which is sometimes referred to as 'international listening', has undergone many changes since the handbook was first published in 1946. Receivers and station programming have both grown more sophisticated, creating a new breed of SWL fans — those more interested in the message than the medium.

Millions of people around the world keep in touch with their homeland through the news and music of shortwave broadcasters. Students have also discovered the new horizons of information and culture which the HF bands provide. For these listeners, as well as the traditional DXer, the WRTVH is hard to resist.

As its name indicates, the handbook covers worldwide radio and television broadcasters. This year, a whopping 300 pages are given over to listing 'world radio' stations.

These are divided into regions, each with a map of all principal transmitter sites.

And so, station by station, the handbook works its way around the globe. Each listing details station frequencies, power levels and the mailing address, telephone/cable/telex numbers for the station.

Programming details include operating hours and frequency schedules, languages and news bulletins, key personnel and the procedures for obtaining a QSL from the station. Both 'home services' (for local listeners, such as ABC radio) and 'external services' (in our case, Radio Australia) are listed, once again with complete schedules for external broadcasts.

For each country, an introductory section provides local time modifiers from UTC, country population and the estimated number of radio sets in use, principle language used in home service broadcasts, ITU and IDD (overseas telephone) codes.

To this, add the WRTVH tables of broadcasts in English and the popular 'international language' of Esperanto, and selected SW programs for DX and SWL enthusiasts. Plus, just to make it easy, complete listings of all world short, medium and long wave stations by frequency.

The handbook's television section is of more use for professionals and those employed in the TV industry, but, still makes a fascinating read.

By the time you reach the back cover, that's almost 600 pages of DX delight . . . certainly value at any price, more so when the handbook costs the same as it has done for years. In fact, the World Radio TV Handbook could easily offer a money-back guarantee that it will increase your enjoyment of short-wave radio by 100%.

Dick Smith Electronics, Australia's main agent for the handbook, have supplied a copy of the 1989 edition for CBA to give away — turn to the bottom of page 50 for details.

As only a limited number of handbooks are brought into Australia each year, I would recommend that you move at high speed towards your nearest Dick Smith store and buy a copy while they last.

— David Flynn


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# HF UPLINK

**Welcome to HF Link. This month I've included details on SWL/DX clubs in Australia and some news concerning Radio Australia.**

**Remember all times are in UTC (same as GMT unless otherwise stated) and all frequencies are in kHz. International broadcast stations are in AM mode and utility stations are in SSB, also unless stated otherwise.**

## NEW SERVICE FROM OTC

Last year OTC commenced a new radio telephone service for aircraft flying in and around Australia. Called SKYCOM, it provides full telephone facilities through OTC's Sydney coastal radio station. SKYCOM operates 24 hours per day, seven days a week.

The HF frequencies currently used are 4687, 8930 and 11342.

8930 seems to carry the most traffic and is well worth listening too (mind you, you'll probably get into trouble if you're caught listening to other people's phone/radio communications as this is a DoTaC no-no — Ed).

Here's some more information on time signal stations.

5,10,15 and 20 MHz are internationally designated standard time and frequency allocations and are for use by stations which generate time signals of absolute accuracy.

The American time and frequency stations WWV and WWVH can be heard here in Australia at various times of the day and night. WWV, situated in Boulder, Colorado provides some useful information for DXers in the form of the geophysical alert broadcast. This bulletin, heard at 18 minutes past the hour, provides current data on the ionosphere and is updated every three hours.

## DX/SWL CLUBS IN AUSTRALIA

If you enjoy listening to the shortwave bands and want to learn more about a particular aspect of the hobby then maybe you should consider joining a club.

Which club though ?

There are three Australian shortwave groups which cater for a wide range of interests.

The longest running club is the Australian Radio DX Club (ARDXC), situated in Melbourne but with branches in most States of Australia.

Its monthly magazine, Australian DX News, contains columns on Shortwave, Mediumwave, Utility, TV and FM DXing and often has articles on related subjects from these and other areas of the hobby.

ARDXC also produces special publications from time to time, such as its Mediumwave guide, which can be of great assistance. Membership is $24 for the first year (within Australia) and $20 each year after that.

The address is ARDXC Inc.
P.O.BOX 227 Box Hill
Victoria 3128

DX Australia is also situated in Melbourne and although not as big as ARDXC it still produces a top quality magazine each month.

The name of its publication is DX'ers CALLING.

Its main areas of interest are shortwave and mediumwave DXing with a splash of FM DX. The club was formed in July 1982 and has since developed a strong reputation with DXers around the world.

Membership rates are: $20 for residents living in Australia and the South Pacific with a $15 concession rate for Australian students (under 18 years) and pensioners.

The address is DX Australia
P.O. Box 285 Mt Waverley
Victoria 3149

Australia's third club is the Adelaide-based Southern Cross DX Club and its monthly magazine, DX POST, includes material on shortwave, mediumwave and utility DXing plus specialised articles.

Membership to the club costs $20 per year if you live in Australia and there is a $2 joining fee.

The address is Southern Cross DX Club
GPO Box 1487
Adelaide SA 5001

If you write to any of these clubs and include a few dollars in mint stamps they will send you a sample copy of their magazine together with details on how to join.

As someone who has been a member of all three clubs I can tell you that they all have good and bad points.

A few years ago the South Pacific Association of Radio Clubs (SPARC) was formed by DX clubs in the South Pacific region. The association was formed by DX clubs in New Zealand as well as DX Australia and the Southern Cross. SPARC uses the resources of all member clubs to foster and promote the hobby.

SPARC is also in contact with the two other umbrella groups overseas which have been promoting DXing for many years and have big reputations in the hobby for their achievements.

When choosing a club remember that you have to know what you want out of the hobby and also be prepared to share information with others through involvement in the club.

## SES HF FREQUENCIES

Here in NSW we have an extensive network of State Emergency Services (SES) stations scattered around the State ready to spring into operation during any emergency situation. SES not only operates on VHF and UHF but also has a large number of HF stations.

Each business day of the week the SES relay station at Wildes Meadow (callsign VL2ZQ) — situated in the southern highlands of NSW — conducts HF checks with stations around NSW.

At 0915 local time VL2ZQ starts checks on 7330.

Once stations have been checked on this frequency it moves to 4567, then on to 3729 and finally on 3743 — 7330 and 4567 are the listening watch frequencies for Wildes Meadow during the day in the event of its services being needed.

## POLICE ON HF

Even though modern communications exist between each capital city of Australia these can easily be disrupted during a natural disaster. HF communications provides that all-important link during those national disasters when conventional communications are broken.

Each Wednesday morning at 0000 most of Australia's State and Federal Police conduct communications checks between each other to ensure those vital communication links can be maintained during times of crisis.

Callsigns are as follows: VKC Melbourne (Control station), VKM Darwin, VKA Adelaide, VKG Sydney, VKR Brisbane, VKI Perth and VI1CP Commonwealth Police in Canberra. It appears that Hobart is not represented even though according to the AMFAR/SMIS Hobart has HF facilities.

The Police network has a group of frequencies called 'Cross border frequencies' or XBF for short.

XBF4 is 7657, XBF5 is 10505, XBF6 is 13730 and XBF7 is 17676.

## MEDIUMWAVE PUBLICATION FROM ARDX.

In early 1988 ARDXC published the first edition of its Mediumwave Guide. This 106-page publication is a very handy reference book for anyone who is interested in DXing mediumwave stations in Australia, Asia and the Pacific.

The nine sections in the book contain information for the novice right through to the experienced DXer.

The publication costs $15 for DXers within Australia and is superior to the DoTaC publication mentioned in my last column.

## RADIO AUSTRALIA REVIEW.

Radio Australia will be 50 years old this year and broadcasts mainly to the South Pacific region of the world through nine languages and the ABC is conducting a review of Radio Australia's performance to determine its future direction.

Some of the terms of reference are:

*** The role and functions of Radio Australia.**
*** Funding of Radio Australia.**
*** The value and impact Radio Australia has with its listeners 'program policy' priorities and target areas**
*** Long and medium term requirements**

If you have any questions about what I've put in the column or want to know more about the hobby drop me a letter with a SAE and I'll do my best to answer any questions you may have. I would also be interested in hearing from you if you have any notes for the column.

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## DAVID FLYNN REVIEWS THE NEW

# REGENCY AR477 UHF

**So, you've been waiting for a 477 MHz handheld with electronic channel selection, scanning and channel lock-out, per-channel programmable duplex, LCD readout and five watts up the stick?**

**The wise men tell us that some things are worth waiting for, and the Regency AR477 begs to be taken as proof of this.**

And we at CBA certainly had to wait a few days and shift a few deadlines to squeeze in this review.

### RIG IS SMALLER THAN THE ANTENNA

For a start, its the first 477 MHz handheld which is smaller than the antenna. The crucial dimensions are 125 x 50 x 4mm (hwd) and it weighs in at 440 grams. For such a compact radio the AR477 really packs the features in, and all credit is due to the smart microprocessors lurking within.

The AR477 looks rather bland from most angles — surely such a whiz-kid of a handheld should be brimming with buttons and lights? It's not until you look further that you realize almost every control resides on the top deck — which is ideal for portable operation.

The volume and squelch knobs are smooth in operation, but, I would expect much less sideways movement and 'wobble' in these controls. The five channel/program keys are all arranged in a logical sequence, although some users might prefer larger keys.

Also atop the AR477 are the earphone/speaker-mike and battery charge sockets and, of course, a decent-sized liquid crystal display and antenna connector (BNC, as per usual). The earphone and speaker-mike sockets are combined into a single jack, which means that only Regency's own speaker-mike can be used, unless you dig up the appropriate connector for your standard two-pin device.

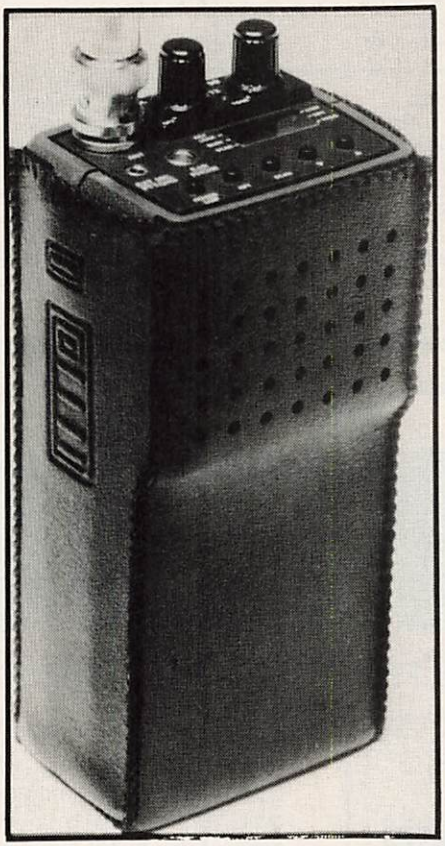
On the side panel, above the flush-mounted PTT switch, is an unmarked button which the handbook indicates is the 'tone defeat key'. Actually, this is more the result of a process of elimination, as the handbook doesn't have any sort of diagram labelling various controls. More on that later.

### OPERATION

To get the AR477 up and running in the usual manner, channels are selected by the up/down buttons. Press once for a single channel change, or hold the key down and the AR477 sprints through the band in six seconds. Each keystroke is accompanied by a tone.

The scanning key activates — yes, you guessed it — the scan function. This flicks across the band in some two seconds, locking onto any busy channel. A one-second delay allows you to hear the other side of the conversation, and to stay on that channel just press the scan key once again.

Of course, in most areas the AR477 would lock-up on the first repeater it comes across — which is likely the last place you'll want to be. So Regency have provided a channel lock-out



(which they call 'pass'), identical to that used in any scanner. Select the unwanted channels and press both the tone defeat and repeated keys at the same time. The 'pass' indicator on the LCD display will light up on that channel.

### REPEATERS ON 8 CHANNELS

The AR477 has more tricks up its plastic sleeve, such as the programmable duplex function. A great idea — after all, how many handheld users can access repeaters on all eight channels? This allows you to set the AR477 to operate in duplex on chosen channels, leaving others between one and eight free for normal use without having to change from duplex to simplex.

Regency have also thought ahead and fitted a key-lock function, which disables the keys (again, a function on most portale scanners).

The supplied charger is a beauty from Arlec and has a red LCD which indicates reverse polarity on the charging connections. There are leads for charging the four most common size power sockets, plus 9v 'transistor' terminals and even alligator clips for odd connections.

The only drawback is that the multi-pin arrangement on the charge lead gets in the way if you are trying to operate the AR477 from 240v or during recharging.

If there is an Achille's heel to this radio, it must be the flimsy instruction booklet, which leaves a great deal to be desired.

To begin with, there's no diagram of the rig to indicate which control is which. You get the feeling that Regency just forgot about it, because each paragraph explaining the rig's control operation is neatly numbered, but, the numbers don't refer to anything. Not a problem on most look-alike handhelds without such frills as this one and certainly no drama for the UHF-familiar amongst us.

But a newcomer to the game wouldn't be overly confident.

The major flaw would be that the rig comes with the nicad pack (a sizeable 11v 450 mAh slab) in a separate plastic wrapping, but, nowhere in this booklet are you told that:

(a) this little bundle is a nicad battery pack, or

(b) that you need to insert it into the radio before you can use the rig.

So you fiddle around the case and find a tiny recess on the bottom of the radio, insert a screwdriver and fiddle around some more, and discover that the back pops off and there's the place for your nicad pack.

Perhaps you think these little things are too basic to be of serious concern? As the Hollywood producers says, "Never overestimate the intelligence of your audience."

But, at least there's some light relief from the 'Japiish' (poorly-translated Japanese-English) instructions. How else do you react to statements such as 'threw up the channel by holding down the key' or the specifications listing of 'Ham and noise'?

Although we didn't have time to put the AR477 through its paces on the test bench, it acquitted itself very well on air — which is where it really counts, after all. Modulation was reported as very clear, and the benefits of a full five watts in the hand are quickly appreciated. Reception was fine on all counts, through a sharp speaker.

At an RRP of $750, Regency's AR477 offers something which has been lacking in the UHF portable market — competition.

# ODDS & SODS

## NEW 27MHz GROUND INDEPENDENT ANTENNA SOON

A new antenna for 27MHz is soon to be released from a well known Victorian manufacturer and pre-release testing indicates that it will be a beauty.

The antenna is totally ground independent and is designed to fit onto any mount with a 3/8 inch hole — it comes complete with a 3.3 metre length of coaxial cable attached.

The radiator is three feet long for land use and four feet (white covered) for the marine market. It is tuned for maximum performance and a standard CB whip will not fit onto the base and tuned coil assembly.

Tests have shown that this antenna has an SWR reading better than 1.5:1 over 20 of the 40 channels and its unqiue design makes it suitable for use in boats, buses with fibreglass cabins, trucks and more — an unusual feature is that it can be mounted vertically or horizontally (this I've just gotta see — Ed).

More on this new antenna in our next issue.

## OUT WEST GONE WEST

In line with giving our readers what they want we have decided (after a lengthy debate) to drop the 'Out West' column following Don Stewart's retirement. We have done this somewhat reluctantly as we received quite an amount of good material from other Westralian readers, however, due to its limited reader appeal we have elected to drop it for the time being — sorry.

## CLUB REGISTER AND NEWS

The club section has also been dropped for the same reason as above — limited interest. Our reader's survey indicated that the club's sections came along last on reader's preferences so the decision has been taken to drop them.

We're sorry for those few clubs which did in fact regularly contribute material, however, the shortage of space is an ever continuing problem and we simply don't have any alternatives at this time — again, sorry.

## WERNER WULFE BACK IN BUSINESS?

We hear on the ever reliable grapevine that Werner Wulfe might well be back in business building quality beam antennas in the very near future. Werner retired due to health problems some time back, but, the rumor is strong that he will be back in business in a short time.

## POWERBAND TO ALSO MAKE BEAMS?

Another strong rumor is that Ken Reynolds of Powerband is currently finishing off some rigs for the manufacture of Yagi antennas. Initially it is likely that he will concentrate on three elements only, but, given the demand, we have no doubt that these will increase to four and five elements before too long.

## ICOM R7000 SCANNER REVIEW

A couple of things to watch out for are a comprehensive review of the top-shelf ICON R7000 scanner in our next issue and, hopefully, also a review on the just released IC-R7000 communications receiver.

The latter looks to be the new 'state of the art' receiver and, like its amateur rig contemporary the IC-781, it features a multi-function CRT display. It's an awesome looking unit and, judging by its specification, its performance is also likely to be awesome. The one thing which remains in question is the price — the IC-781 costs $10,000 and you can bet the new receiver is going to be also up there with the most expensive, but, hardly $10,000.

Anyway, we'll know next issue.

## WE WERE WRONG

In our "Back to You' page in our last issue we advised that a CB licence cost $14 — they don't, it's $15.

Also, the new address for DoTaC in WA is 7th floor, 200 Adelaide Terrace, Perth 6000 (P.O. Box 6189, East Perth 6004).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Greg Towells reports on . . .

# UHF NEWS and HAPPENINGS

**Welcome to UHF News and Happenings for another two months. Don't forget, this is your column and to ensure that everyone is up to date on UHF happenings, you have to let me know so that it gets into print! Address all mail to: PO Box 514, Toukley, NSW 2263. My deadline is about two weeks after this issue hits the news stands.**

I had a letter from The Great Lakes Radio Club (Tuncurry, NSW), with suggestions about changes to UHF channel uses. Some time ago I let fly a suggestion regarding changing the emergency channel to 9 and re-allocating the 5/35 repeaters to general use. However, the idea from the GLRC is an intelligent idea with the potential to increase the efficient use of UHF CB. The following is reprinted direct from the Secretary of the Great Lakes Radio Club, Mr S. Ellis, who writes: "I have a suggestion which I would like to float to readers of CB Action.

"It is my belief that most operators on UHF CB today follow one of four monitoring practices. They either:

- Scan all or a selection of channels, depending on their rig;
- Listen for calls on a pre-arranged channel;
- Listen on whichever is the particular repeater channel in their area; or
- Listen on channel 5 (mainly emergency monitors).

"Consequently very few still listen on channel 11 and then move to another channel when a contact is made.

"In addition, a lot of CBers are reluctant to become emergency monitors because it means dedicating either a transceiver, a scanner or a priority channel to channel 5.

"My suggestion is, subject to DoTaC approval, channels 5/35 should become calling channels as well as emergency channels, on the same basis that now applies on a number of marine bands, including 27,880 MHz. If necessary, a three-minute silence period on the hour and half-hour, to listen for emergency calls as applies on marine bands, could be introduced. The principle would be that callers would move to another channel as soon as contact was established.

"I realise that this proposal would result in more traffic being heard on channel 5, possibly increasing the load on emergency monitors, and that this would probably generate resistance in that quarter, but it would also mean that a lot more stations would monitor channel 5, so that the chance of an emergency call being heard by somebody in a position to give immediate assistance would be increased. Of course, there would be the yahoos who would transmit irrelevancies as well, but I think they are there already.

"This idea has already been endorsed by the Great Lakes Radio Club, but we would like to get a wider expression of opinion before deciding whether to make a formal approach to DoTaC."

All users of UHF CB should take time to consider the above suggestion from the Great Lakes Radio Club, as there are a number of advantages to be had. Some of the advantages that readily come to mind are:

- The freeing for general use of channel 11;
- The increase of people monitoring channel 5 for emergency situations at any one time. Don't forget, all communications on any channel are required to cease when emergency traffic appears at any time: and
- The increased utilisation of the network of 5/35 repeaters, and there are probably many more.

I ask that any reader with further comment on this idea, suggestions or criticisms, write to me at the address above, and/or write directly to The Secretary, Great Lakes Radio Club, 82 Taree Street, Tuncurry, NSW, 2428. After consideration of ideas from UHFers nationwide, the group plans a formal submission to DoTaC for change as suggested.

## BALLARAT IS ALIVE!

Ballarat Rural Emergency Monitors have written to notify readers that "5 IS ALIVE", referring of course to the 5/35 repeater in the Ballarat area. Callsign is BAL-05 and the unit is located on Mount Warrenheip, which is just east and overlooking Ballarat. BAL-05 came on air in test mode just before Christmas, and is now in fully functioning state.

The location and positioning of BAL-05 has been chosen with some care so as NOT to be accessible from metropolitan Melbourne or Geelong. The group hopes that this will prevent some of the nuisance calls that seem to emanate from those areas, and plague other local repeaters in the Ballarat area (Bal-02).

The monitoring is done on a 24-hour, seven-day-a-week basis by the Ballarat Rural Emergency Monitors and assistance is available for motorists using the Western and Glenelg Highways. And thanks for the info. Ron VEC-645, the Group Liaison Officer.

Looking at the first two articles above, may I make the suggestion that emergency monitoring groups and sponsors of 5/35 repeaters take the time to write to the Great Lakes Radio Club and comment on its idea. In fact, any who are interested in the further development of UHF CB at least commit some thoughts to paper regarding the proposed changes to 5/35 channels.

## NO 3/33 IN TAREE

A short note from the Manning Region Repeater Association draws attention to the fact that there is no 3/33 repeater in the Taree district. I rely on feedback from readers to compile most of the listing, and often mistakes creep in. However, believe it or not, information from DoTaC often cannot be counted on to be totally correct. Many people, on requesting a listing of UHF repeaters from DoTaC, end up getting a photocopy of the list from CB Action! The Microfishe listing is full of info not up to date as well, with entries not deleted when licenses are surrended and new entries taking much time to appear.

Having said that, a reader in Hobart, Tasmania (hello Rodger), sent me a listing of repeaters in that Sate, courtesy of DoTaC, and surprise, surprise, it is not a copy of CBA. I will amend the listing in time for the next issue. Good to see that DoTaC, in its listing actually requests that: "CBers MUST refrain from transmitting on the SIMPLEX mode on the assigned repeater channels when operating in the recognised service area of a particular repeater station."

I note that the latest (well, not really the latest, but the current in-thing among many users of repeaters) in Sydney is the stations equipped with mega-element beams aimed at said repeaters so as to power out 'lesser users'. If you lot have not noticed yet, an increasing number of users are getting sick and tired of your antics. Give it a rest for a while, or move to a simplex channel where you can power out all of your mates. Also, the goats that have discovered the means with which to reset the repeaters when there is a jamming signal present, are achieving nothing more than blocking up a channel when the repeater could time-out and give someone the chance to pass a simplex message to another operator. Think about it!

## US PATENT FOR MOBILE ONE

"Like selling ice cubes to the Eskimos", was how Mobile One Numero Uno Greg Ackman described the granting of an American Patent for his company's heavy duty antenna mounting base.

The patent, numbered 4,804,973 and granted on 14 February, 1989 runs to a number of pages and probably requires a patent lawyer's knowledge to understand, however, Greg is naturally more than happy at the acceptance of the mount as 'patentable' and it certainly reflects the quality of the item.

Another one for Mobile One!

Incidentally, Mobile One is supplying seven 'Super Spring Skip Whips' as prizes for this issue's Wordmaze with one person from each State becoming a winner so fill in the answers to what are essentially very easy questions and then cross your legs and hope.

## POWER MICROPHONES STOLEN

Queensland's Furious Fewster is even more furious than ever right now. He had a shipment of Voicecraft model 7400 power desk microphones stolen recently and he would dearly like to know who pinched 'em. If you are offered one of these microphones give Rod a call on (07) 204 5000.


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# SCANNING ACTION

By RUSSELL BRYANT

**In this issue's column I will endeavor to answer some of your letters.**

First, a request from Phillip of Melbourne, who asks us to name the various scanner bands. He says he is new to scanning, and when he purchased his first radio he believed it scanned mid band VHF, 68-88 MHz. He discovered it in fact received 30-50 MHz. The designation of the scanner bands is based on the official DoTaC labelling system. Here it is:

30- 50 MHz Low band VHF
68- 88 MHz Mid band VHF
108-118 MHz Air navigation band
118-136 MHz Air communications band
148-174 MHz High band VHF
250-400 MHz Military UHF
400-470 MHz UHF low
470-520 MHz UHF mid
800-950 MHz UHF high

I hope that has been of some use to you Phil and that dealers will soon adopt the band names.

Mark from Raymond Terrace, NSW, says that he listens to the Port Stephens Shire Council and Bushfire Brigade, on 499,375, as well as the SES, on 168,820 and 168,850. His problem is the Bushfire Brigade has changed frequency and he is having some difficulty locating the new channel.

Firstly, Mark, to listen to the Council try 494,175, the BTX or repeater output whereas 499,375 is the BRX or repeater input frequency. Reception of mobiles on the BRX will depend how close to your location they are. Next, some UHF systems allow mobiles to talk around the repeater and they normally use the BTX frequency. This is simplex and again what you hear will be down to the location of the mobiles. Some-bushfire brigades use 27 MHz for communications on the fire ground, 27,580, 27,330 and 27,240 MHz . Unfortunately, Mark, I was unable to locate a second channel, perhaps another reader may be able to assist.

Another Mark, this time from Brisbane, writes that he is planning a trip to the snowfields and would like to know the frequencies used by the Ski Patrols and other emergency services.

The NSW Ski Patrol has two mid VHF frequencies 73,610 MHz and 73,770 MHz. Ski Patrol personnel have Motorola MX300 series portables on issue, Victorian Alpine Commission Search and Rescue Teams can be found on 467,625 MHz. Some of the emergency services to be found in the snowfields are:

83,910 Police in Cooma and surrounding area
76,670 NSW & Victorian Ambulance
78,130 NSW Fire Brigade
74,510 NSW National Parks
71,615 Victorian National Parks
168,310 Victoria Police

If anyone has additional frequencies for the snowfields, please drop me a line and we will let other scanner users know.

Our next letter is from Brendan in Moree, who is seeking the Ambulance link frequency from Tamworth Control to Moree station. He says he is also interested in other links in his area. Some of the links used by various services in and around Moree are (frequencies shown are input/output):

149,875/155,075 Fire Brigade — Tamworth, Narrabri, Gunnedah, Wee Waa, Moree, Boggabri.
149,675/154,875 Main Roads — Tamworth, Bingara, Moree.
149,800/155,000 Grain Handling Authority — Tamworth to Moree.
451,300/460,800 Police — Narrabri to Bellata

I could not locate a specific frequency used as a link by the Ambulance in the Moree area. That doesn't mean it doesn't have any. Link frequencies can be found mainly between 149 to 156, 403 to 406, 100 to 420,000 MHz, 450,000 to 462,000 MHz. These limits include the input and output frequency. Links are a useful way of copying a service you may not normally be able to receive. Links, usually of low power, often one to 10 watts, join repeaters and bases to each other as well as control rooms to remote repeaters and bases. In a simplex VHF system the reception of mobiles is sometimes difficult, a link carrying the mobile transmission to the control room is the best way of monitoring both sides of the conversation.

Harley, from Balwyn, Victoria, wants to know the new frequencies of the Melbourne Ambulance Service. They are: 412,475; 412,500: 412,575: 412'650; 412,750: 412,850; 413,025; 413,075, 413,100; 413,125; 413,150; 413,175; 413,225; 413,275; 413,350; 413,375; 413,425. The repeater input is 9.45 MHz below the given frequency. The Victorian Ambulance anticipate its UHF network to be commissioned shortly. The system will be based on Computer Aided Despatch which will basically do away with voice transmissions. Data will be the primary communications mode, with voice as the back-up should the computers fail. A number of voice channels will be available in the system for car-to-car transmissions as well as emergency conversations with hospitals.

Still in Victoria, John from Shepparton says that one of the new railway frequencies, 419,950 MHz, is active in his area. Transmissions are of a test nature with technicians communicating with Shepparton railway station. At the commencement and conclusion of each transmission there is a tone similar to packet radio and for some reason he can't hear other stations within the area. The tone John can hear is data which automatically identifies the radio being used to a computer, it also records time, date and train number. As far as not being able to hear other railway stations program 410,500 the repeater input into your scanner and check for activity. If the local stations are 'on the air' you may detect them there first. John, keep me advised as to your success.

To John and the many readers who wrote requesting military frequencies, they will be published in the next column.

Wayne from Narrabri, NSW, passes on some frequencies in his area. The Police use 83,760 as the main channel, with UHF channel 30, 468,575 as the link for UHF-only cars from Sydney that may visit the area. The Ambulance can be heard on 76,640, the Volunteer Rescue Squad on 84,480 with a repeater soon to be on air. For the information of scanner users the repeater input will probably be 84,990 MHz. The SES also uses a repeater with the output on 171,300 during major floods and fires. A link frequency used by the Fire Brigade is 155,075 MHz, and finally the Main Roads Department on 167,590.

This next letter requires little comment except to ask who would live in Canberra? The author of the letter, who for obvious reasons wishes to remain anonymous, says this is a true record of a conversation that took place via the telephone with a radio communications dealer when he enquired about the Bearcat 200 XLT:

**DEALER:** So and So Radio and Communications, can I help you?

**CUSTOMER:** Yes, do you sell handheld scanners?

**DEALER:** What's a scanner?

**CUSTOMER:** Do you sell Citizens Band radios and equipment?

**DEALER:** Yup.

**CUSTOMER:** And you mean to tell me you don't know what a scanner is?

**DEALER:** Never heard of them.

**CUSTOMER:** They are a programmable radio receiver which can monitor frequencies from VHF and UHF and can scan selected stations.

**DEALER:** Look I told you I've never heard of them. They sound illegal anyway.

The dealer then hung up!

Several readers have written asking that I telephone them with information. I am sorry, but editorial policy and limited resources don't allow me the luxury of telephoning my responses to reader requests. I am happy to mail personal replies if a self-addressed stamped envelope accompanies the letter. Deadlines being what they are, please don't worry if your letter takes a while to be published.

In last month's column I detailed the harmonic tuned whip, and its suitability for receiving the three main scanner bands. If I was manufacturing and selling these antennae, I would be making a small fortune gauging by the mail I have received requesting details on construction. Firstly, obtain two mid VHF quarter wave whips, trim one to 36 inches, leave the other at full length. For a base I recommend the Mobile One 'mobile dipole mount'. Attach the mount to an angle bracket or stand-off arm, screw the harmonic whip on the top, the second whip on the bottom (serves as a ground plane) connect to your scanner and you are in business. Construction cost is around $30.

For those who own a PARRF microfiche, frustration sets in when the generic term 'GOVERNMENT', which is used for most of the local, State and federal agencies, is listed against a frequency. I intend to introduce a segment into the column called GOVERNMENT BUSTERS. I'll print six or so frequencies, the callsigns and locations listed on the fiche under the title of 'GOVERNMENT' then ask readers in those areas to write to CBA with the user of a frequency. Who is in favor of this idea?

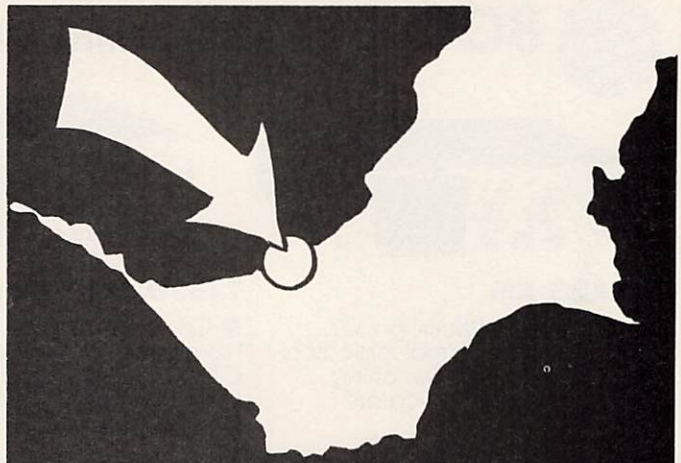
I didn't realise that there are so many combined railway/scanner enthusiasts. Along with the Defence Department frequencies I will also do an update on the new railway channels next column.

David from Wyong, NSW, is the winner of the frequency guide, compliments of CBA and Andrews Communications. You should be receiving it soon Dave. Details from his and other letters on the Victorian Railways will appear in the next column. I wonder what type of antenna he uses to receive V/Line in Wyong?

About now, Tandy will be replacing the super scanner, the PRO 2004, with an improved (if that is possible) scanner. The company's policy is, just prior to the release of the new product, to discount heavily the old model to clear the shelves. If stocks permit, the PRO 2004 may be available at an even better price.

If you can add to, or assist any of the readers with frequency information how about a quick note to CBA. If you are chasing a particular service or channel we may be able to help, or you maybe have a funny story to tell whatever it is, just write to:

SCANNING ACTION,
PO BOX R16,
ROSELANDS, NSW. 2196.

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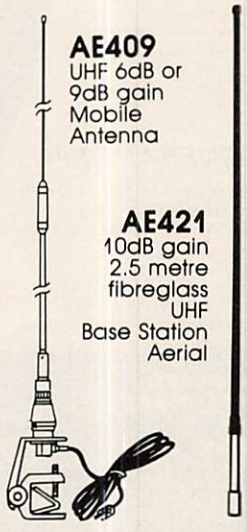

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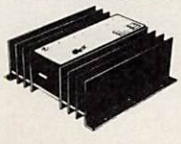


## A NEW ANTENNA FROM MOBILE ONE . . .

# THE PORTABLE SC27 SKIPCHASER

**Mobile One looks to have come up with another winner — the SC27 Skipchaser, a full size portable antenna which can also double as the base antenna. KEN REYNOLDS reviews this long awaited unit and gives it his approval...**

Before the Australian radio communications authorities even acknowledged the existence of CB radio, it was the weekend pilgrimage of hundreds of illegal radio operators — known as 'pirates' in the early days — to venture out into the wilderness with camping equipment, radios and base station antenna equipment in search of that all elusive interstate and international DX.

Even though CB radio operation is no longer an illicit activity **(more's the pity — Ed)** there still are the hordes who regularly pass the weekends operating portable stations right around the continent, and, it is with these enthusiasts in mind that Mobile One of New South Wales has created the SC27 Skipchaser, a completely portable 27MHz base station antenna.

The SC27 is supplied packed in a tough, heavy gauge polythene bag and the whole antenna in its disassembled form measures 1270 millimetres in length — sufficiently small to stow in the boot of the family vehicle.

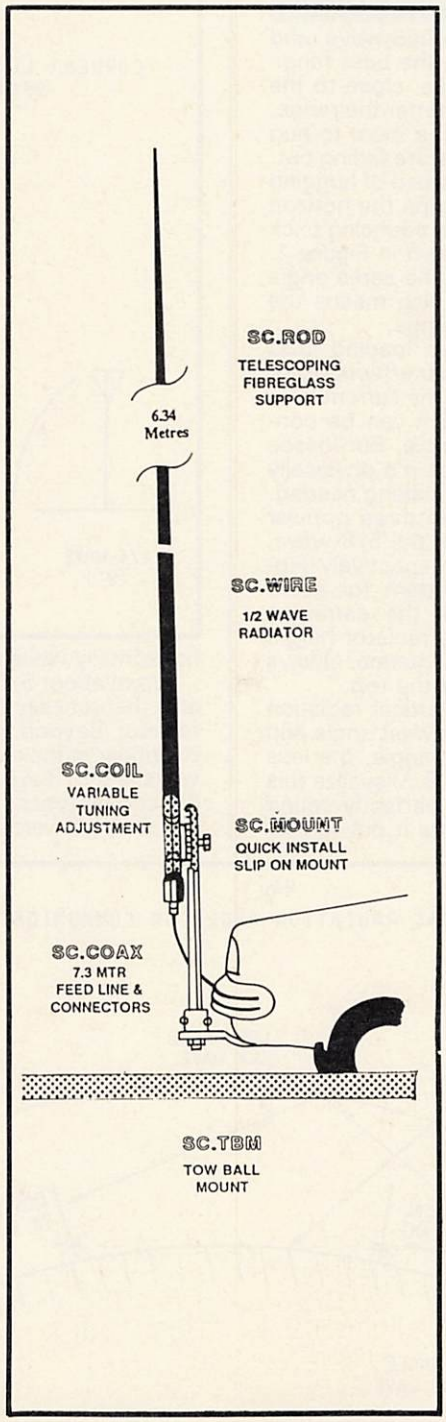
Since this antenna is intended for regular portable use it would have been a good idea for the manufacturer to supply some more permanent means for containing the kit in its break-down form such as some type of soft (or hard) plastic container.

The SC27 is a half wavelength end fed dipole type antenna which relies on a telescoping fibreglass tube assembly to support the flexible wire six-metre long radiator.

The 40 millimetre diameter base fibreglass tube is 1260 millimetres long — a shade over four feet — and contains five other tapered fibreglass tubes which extend from within. The diameter and taper of each subsequent tube allows the assembly to extend to six metres long with the tapers allowing each section to jam lock in the previous tube's taper.

The instructions with the antenna warn not to lock the sections too firmly or damage may be caused. We found that only light pressure was required to hold the tubes in place.

The tip section tapers down to about two millimetres diameter and contains a hook and connector into which the antenna wire is attached with the lower wire end connected through a PL259 to the base mounted tuning unit which screws into the large fibreglass tube at the mount.




The tuning unit when fitted in place allows access for fine tuning with the tuning tool supplied in the kit. Our test unit had a VSWR of 1.2:1 when we received it and we didn't bother to chase a lower value — a SWR of 1.2 indicates that almost all the power is being transferred to the antenna and hopefully radiated in all the right places.

To secure the SC27 in place on your vehicle, the antenna comes equipped with its own steel mast about four feet long with a coupling designed to fit a standard size tow ball. Four bolts are supplied to firmly tighten the mount in place.

### COAX CABLE IS SUPPLIED

A full wavelength of RG58c/u cable — 24 feet — is supplied complete with PL259 connectors already terminated on each end of the cable, one of which connects directly to the SC27's tuning coil and the second of course to your rig or VSWR meter.

We found that if the tuning is left undisturbed and the antenna is always assembled and mounted similarly, then the tuning was reliably repeatable and it should not be necessary to retune the unit each time it is put together.

Performance of the SC27 Skipchaser was exactly as we expected.....it compared favorably with a similar type antenna manufactured from aluminium which is designed for permanent base station use, but, is too large and unwieldy to be easily transported.

We found the tuning coil assembly fitted a little too tightly into the base fibreglass section and having done it up firmly on the first occasion, we had words with the antenna trying to remove it again. A smear of Vaseline in the thread quickly cured the problem for future operations.

Having got everything running smoothly, we found that the whole antenna can be assembled and ready for operation in less than two minutes if you are in a hurry.....and that's pretty slick by anyone's stop-watch.

In all, the Mobile One Skipchaser is an obvious answer to those CBers requiring an easily transportable antenna which performs as well as does their base unit — and of course it can also double as the base unit.

# ANTENNA RADIATION -How does it work?

**Lou Franklin is the author of, among many other CB publications, 'Understanding & Repairing CB Radios' and in this issue he continues his series on antennas, how they work and why . . .**

## OMNIDIRECTIONAL BASE ANTENNAS

CB communication involves both ground-wave and sky-wave or skip propagation. Both give the best range when the vertical radiation angle is low; i.e. close to the earth. The lower this elevation angle, the better the range. With ground waves the lower angle causes them to hug the ground so they cover more distance before fading out.

The same is true for skip waves; but instead of hugging the ground, the wave travels further towards the horizon before striking the earth's atmosphere and bouncing back to earth. The effect of both types is shown in Figure 1. Note that the sky waves are reflected at the same angle they originally struck the atmosphere, which means the lower angles result in the greatest skip range.

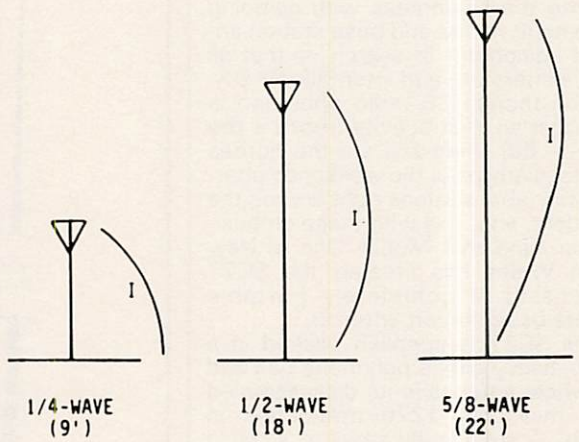
We've seen how the location of whip loading coils affects their vertical radiation angles. Similar effects occur on vertical base antennas. The location of the current loop still depends on the radiator length, which can be controlled to change the vertical radiation angle. But losses are much smaller on base antennas, since it's physically practical to use full-size radiators with no loading needed.

Omnidirectional base antennas come in three popular heights: the 1/4-wave, the 1/2-wave, and the 5/8-wave, corresponding to about 9', 18', and 22' respectively. Figure 2 shows the current distribution pattern for each. ("Height" in a vertical antenna means the same as "length" in a horizontal antenna.) As the radiator height increases, the current loop moves up the antenna, always reaching a peak a 1/4-wavelength below the top.

Raising the current loop lowers the vertical radiation angle, so the 5/8-wave antenna has the lowest angle and the 1/4-wave the highest. The lower the angle, the less radiation lost towards the sky. See Figure 3. Visualize this in three dimensions by starting with a perfectly round balloon; squeezing it from the top spreads it out further horizontally while maintaining the same volume or "field."

Fig. 2

CURRENT LOOP LOCATION AS A FUNCTION OF VERTICAL RADIATOR LENGTH




Up to about 5/8-wavelength, the main lobe angle is low and theoretically has about 2dBd gain over a 1/4-wave radiator. Beyond this height, minor high-angle lobes begin to appear at the expense of the lower lobes. Thus the 1/2-wave and 5/8-wave antennas are the most efective omnidirectional types; 5/8-wave is the best you can do with just a single vertical element.

Fig. 1

EFFECT OF VERTICAL RADIATION ANGLE ON COMMUNICATIONS DISTANCE

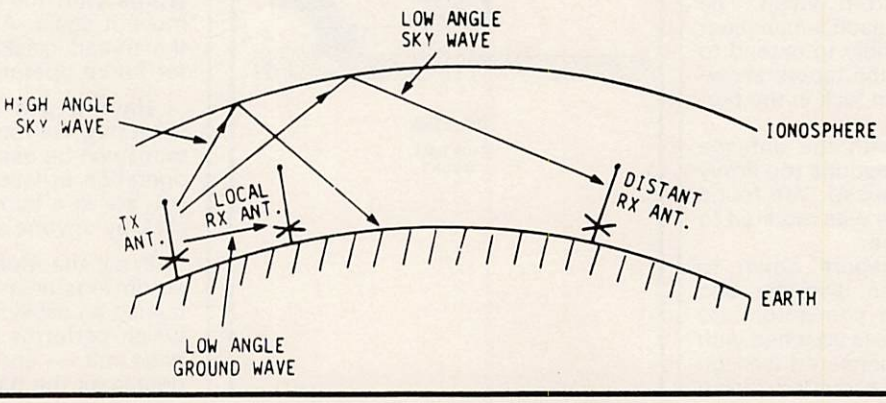
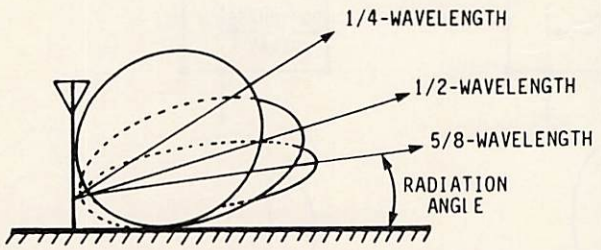


Fig. 3
VERTICAL RADIATION ANGLE AS A FUNCTION OF VERTICAL ANTENNA LENGTH




Since verticals are base-fed but the base isn't always the low impedance point, the 1/2-wave and 5/8-wave antennas generally need matching circuits to compensate for their higher base impedances. The 1/4-wave vertical can be fed directly by 50 coax with no special matching.

## DIRECTIONAL MOBILE ANTENNAS

One of the most popular directional mobile antennas are the dual "truckie type" mirror-mount whips.

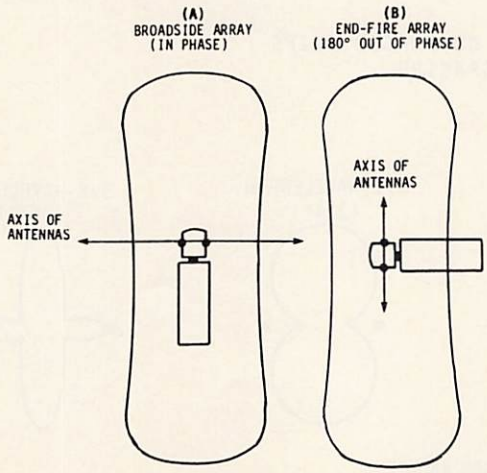
These come under the general category of driven arrays, where both whips are directly driven by the transmitter. The pattern is bidirectional like a dipole. This sytem was developed to solve the problem of field distortion caused by the large metal trailer, and the fact that truck drivers are most interested in communications up and down the road they're travelling.

The field is usually strongest towards the front and back, although it's just as easy to make it perpendicular to the vehicle. Figure 4 shows both possible patterns.

These antennas work on the phasing principle. See Figure 5. If two vertical antennas are spaced a 1/2-wavelength apart and fed equal currents in phase, the radiation will be perpendicular to the line of the antennas. This is called a "broadside array" and is the usual case with truck installations.

When the same whips are fed 180° out of phase, the radiation will be in line with the antennas and is known as an "end fire" array. Theoretically dual antennas have 3 dB gain over a single vertical radiator. The phasing is accomplished by controlling the whip spacing, and by feeding them with a special coax "phasing harness."

Fig. 4
HORIZONTAL RADIATION PATTERN OF CO-PHASED MOBILE WHIPS




For the end-fire pattern, a 1/2-wave "phase delay" section using an extra 12' of coax could be added to one side of the balanced feedpoint, as shown. (12' is a 1/2-wavelength including the coax Velocity Factor.) This means the whip with the extra coax lags the leading whip by 180°, since its signal is delayed by that amount of time.

To carry this a step further, a 90° phase delay produces a unidirectional beam antenna with the major lobe in the direction of the leading antenna. These principles have been applied for years in most directional AM broadcasting towers, and were simply copied for use in CB antennas.

In practice it's nearly impossible to get a 17' whip spacing even on an 18-wheeler. On a car or pickup truck it's more like 1/4-wave spacing! You could do it on a bus using front and rear whips and end-fire phasing. The effect of the different whip spacings is to distort the horizontal signal patterns. See Fig 6. Notice the 1/4-wavelength spacing adds only a tiny improvement over that of a single whip, and by 5/8-wavelength minor side lobes begin to appear, which degrade the directional effects.

I never recommend dual antennas except on big trucks or buses, where a distance close to the correct 1/2-wavelength spacing of 17' can be realized. On smaller vehicles they're a total waste of money. But you'll still see them!

## DIRECTIONAL BASE ANTENNAS

Base beam antennas come under the general category of "parasitic" arrays, where only the "driven" element gets RF directly from the transmitter. The parasitic elements operate by induction of the radiated field from the driven element. CB parasitic beams commonly used are the Yagi (named after its Japanese inventor) and the Quad or Cubical Quad.

## THE YAGI BEAM

The most common Yagi antenna is the 3-element beam, Figure 7. The elements consist of a driven element or 1/2-wave dipole fed by the transmitter, a parasitic 1/2-wave element about 5% longer called the "reflector," and a parasitic element about 5% shorter called the "director."

Maximum radiation is in the direction shown. When the parasitic elements ar located within a 1/4-wavelength of the driven element (the usual case), the current phasing either subtracts from or adds to the field from the driven element.

With reflectors the waves are reflected back towards the driven element, and with directors they're absorbed and re-radiated in the forward direction.

The beam has about 7.5 dBd forward again, a six-fold power increase. (A 4-watt CB sounds like 24 watts using a dipole!) The F/B ratio is typically 20-25 dB, which will greatly improve reception from the power gain in the desired direction and the rejection from the unwanted directions.

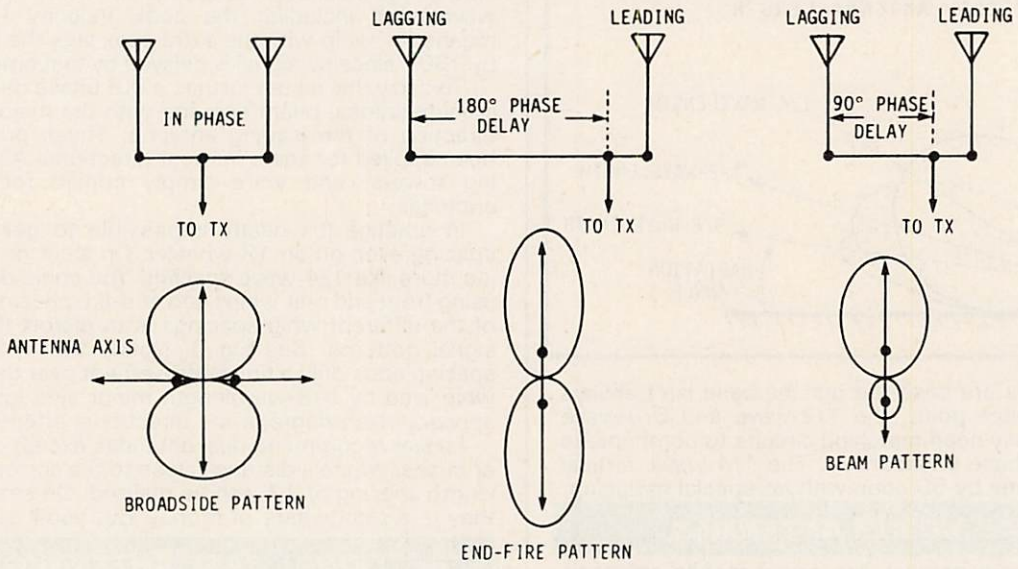
This drawing shows the beam vertically polarized for CB use, but in Ham or TV applications it's horizontally polarized. In any case, the signal is so concentrated that a remotely-controlled electric motor (rotator) is needed to aim it in the desired direction. Some practical dimensions are shown for builders, as well as the most practical formulas for calculating the element lengths.

Generally the best overall performance occurs with the Reflector spaced about 0.15 wavelength from the Driven Element and the Director spaced about 0.20 wavelength away.

The gain and F/B can be further improved by adding more directors, but eventually you reach a point of diminishing returns and mechanical support problems. Commercial CB Yagis are generally limited to 5 elements, which gives almost 10 dBd gain.

**(continued over)**

Fig. 5
USE OF PHASING TO CONTROL RADIATION PATTERN




(THE DOTS ARE THE TWO VERTICALS AS VIEWED FROM ABOVE, SPACED 1/2-WAVELENGTH APART)

# ANTENNA RADIATION

**(continued)**

The most important design considerations for the Yagi include forward gain, F/B ratio, bandwidth, and input impedance. Unfortunately the best of each characteristic rarely occurs at the same physical spacing and dimensions. The spacing for maximum gain is different than the spacing for maximum F/B, and so forth.

Suffice to say that with commercial CB beams, the engineers already made the best overall compromise when they designed it. Figure 7 indicated the most practical dimensions.

The same height-above-ground patterns for dipoles also apply to Yagi and Quad beams. Figure 9 shows the vertical patterns for a 3-element Yagi at a 1/2-wavelength and one wavelength above an ideal ground, viewed from one side. At a 1/2-wavelength there's one major lobe concentrated about 30° above the horizon. Increasing the height to one wavelength yields two lobes at about 15° and 45° elevation.

The lower lobe can improve the DX and ground-wave propagation, while the higher lobe is sometimes useful during short skip conditions.

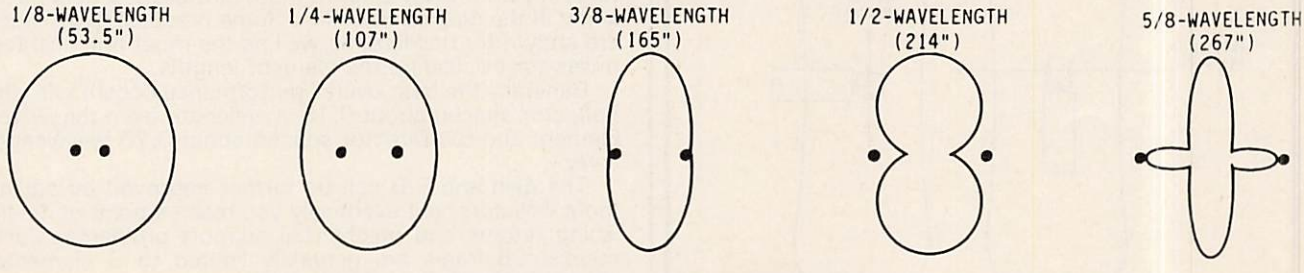
## THE CUBICAL QUAD BEAM

The other major parasitic beam is the Quad. Figure 10 summarises its main characteristics and design dimensions. It consists of two or more closed one-wavelength wire loops in a diamond or square shape. The first parasitic element is generally chosen to be a reflector; additional elements will be directors.

Each full-wave loop has four 1/4-wavelength sides, hence the name. Like the Yagi, only one loop is driven; the reflector is about 3% longer than one wavelength and the director(s) about 3% shorter. Polarization is determined by the feedpoint location.

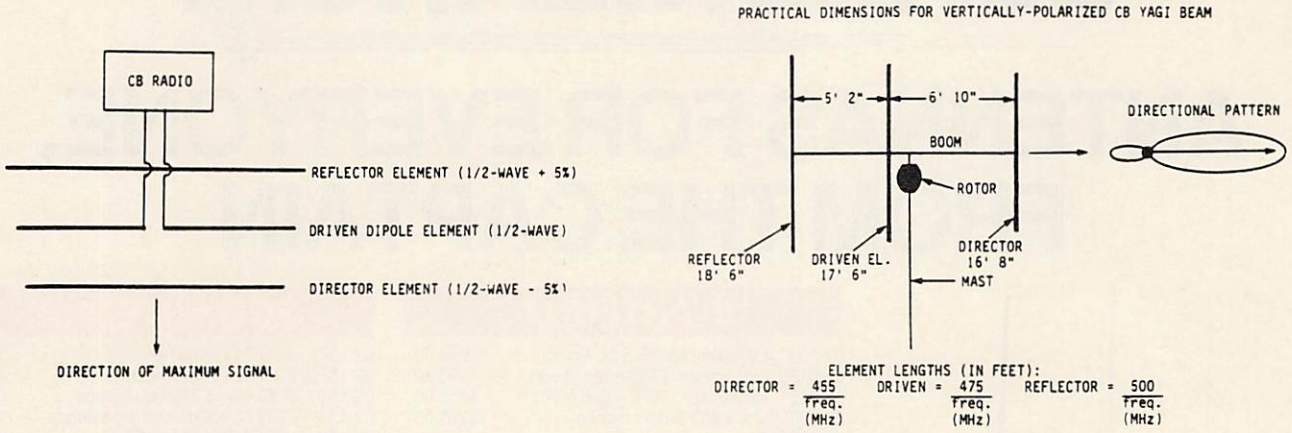
Radiation patterns are like the Yagi. However the Quad has several advantages which make it extremely popular with DXers, and that's why they're still being made for CB use. From a constructional standpoint it's much simpler, needing only one short boom and an "X" frame for each

Fig. 6
HORIZONTAL RADIATION PATTERNS OF CO-PHASED WHIPS AS A FUNCTION OF THEIR SPACING




(DOTS ARE THE WHIPS AS VIEWED FROM ABOVE)

Fig. 7
THE 3-ELEMENT YAGI BEAM




wire loop. These can be made from bamboo, although commercial CB versions use aluminium tubing and are much more expensive.

The most important advantages are electrical: a 2-element Quad has about the same forward gain and F/B ratio as a 3-element Yagi beam, and a 3-element Quad is about the same as a 4-element Yagi, and so on. This saves on costs. A dipole or Yagi is practically useless as a DX antenna when less than a 1/2-wavelength above ground, but a Quad has a low radiation angle even at very low mounting heights.

This means big, expensive towers aren't needed to make it effective. Finally, the Quad has much higher radiation resistance than a Yagi, simplifying RF power transfer from a 50 (ohm) transceiver.

Fig. 9
VERTICAL BEAM RADIATION PATTERNS (SIDE VIEW)

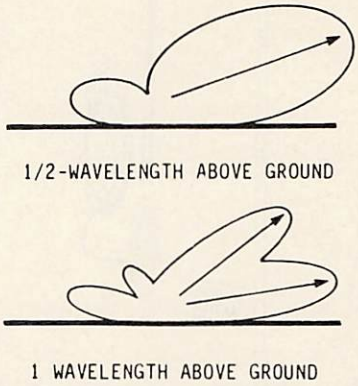
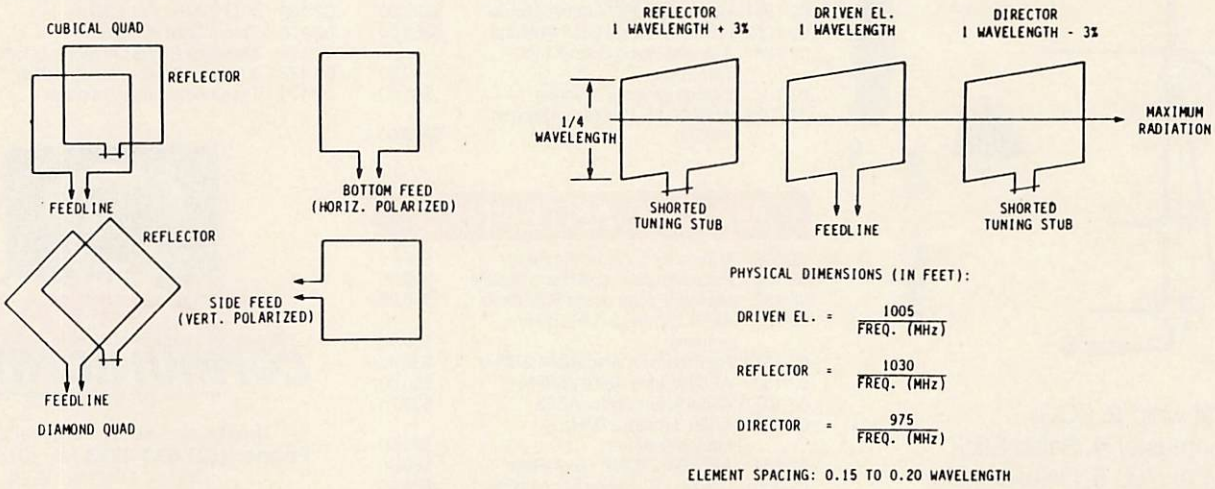



Fig. 10
THE QUAD BEAM ANTENNA



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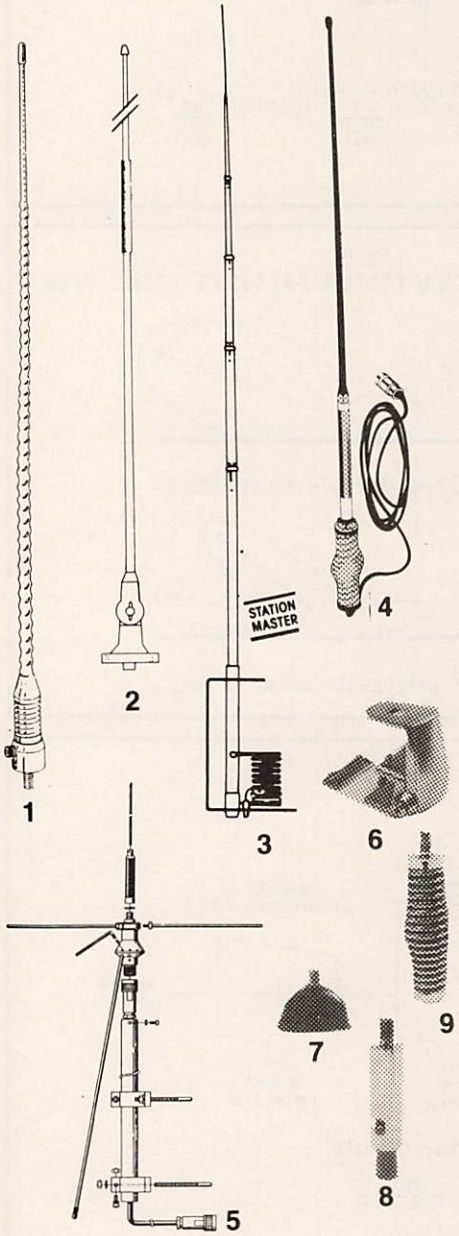


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**3.** Stationmaster **4.** Safari Stick
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| 02-69080 | Laser TNC-800 Portable Antenna | $56.00 |
| 02-69081 | Laser BNC-800 Portable Antenna | $56.00 |
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| 02-716 | S.A.M. Assembly Mount | $35.00 |
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| 02-721 | Std marine base 5/16"y M | $5.90 |
| 02-722 | Slope Adj base 5/16" M | $8.50 |
| 02-723 | Slope Adj base H/D 5/16" M | $8.50 |

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| 02-729 | Truck Lip Mount for 2-720 | $14.50 |
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## STEPHYN NEWLYN TELLS YOU ALL YOU NEED TO KNOW ABOUT

# USED SHORTWAVE RECEIVERS

**Over the past decade a wide variety of receivers have come into the SW receiver market — some good, some bad!!! I hope in this article to give you a look at what's available on the secondhand receiver market.**

I should explain that I am going to ignore 'valve receivers' in this article for two reasons — one is that they are hard to find replacement parts for and (despite what valve enthusiasts say) do not offer better performance than some modern digital portable receivers — although there are exceptions.

About 12 years ago a boom in shortwave receivers occurred in Japan and this was created artificially by the receiver manufacturers.

Firms such as SONY and National Panasonic produced good quality receivers which, even now, are looked upon as a good radio buy. This boom lasted for about three years but left a lasting impression on the shortwave receiver market.

Now why did this 'boom' affect the receiver market?

Well a number of reasons come to mind — importantly, the public became aware of the fact that there is more to radio than AM or FM. More decent receivers were produced and the technology used in those receivers was refined and developed so that the receivers produced today are, on the whole, very good performers.

During the past 15 years I have owned and operated the following sets — Realistic DX-160 and DX-302, Sony ICF-2001, ICF-2001D, ICF-7600A, ICF-6700W and ICF-68--W, Drake SSR-1, Icom R71/E and Kenwood R-5000 — so, I have had some experience with SW receivers and I am hopeful that this article will help you decide on a good secondhand radio.

### WHERE TO LOOK

Look in the radio column of the classifieds of your daily paper, also check 'Amateur Radio Action' in their classified section and be prepared to put a 'WANTED' advertisement in the paper. Some people are thinking of selling but need a little prompting — go to a 'BUY and SELL' run by an AMATEUR or CB club and see what you can find. Some radio stores have secondhand sections where trade-ins are displayed for sale and most of these stores will give some sort of warranty (usually 90 days) so you have some backup if your receiver fails.

### I'VE FOUND WHAT I WANT! WHAT NEXT?

When you find the receiver you want check it over, look for obvious dents or scratches, knobs missing or loose, or a general grubbiness.(If it's got faults ask for a discount or don't buy!!). The chances are that the set has been mishandled or dropped and may give trouble later.

Does the set have its instruction manual?

If not, ask for a discount as some sets tune and operate in different ways and you will need the manual to operate properly.

Is the original packing still with the set?

It will come in handy later on if you move somewhere or go on a camping trip with your radio.

Is a service manual supplied with the set?

It will come in handy especially with lesser known makes as some servicemen are not familiar with all makes.

With this in mind it would be wise to ring up the service division of the manufacturer and ask whether they are capable of repairing the radio you are thinking of buying and have readily available spare parts.

So, when looking for your radio use commonsense and it should be a very enjoyable purchase.

### WHICH BRAND

If you thought that Icom, Kenwood and Yaesu were the only ones who made good quality SW radios you're wrong!!

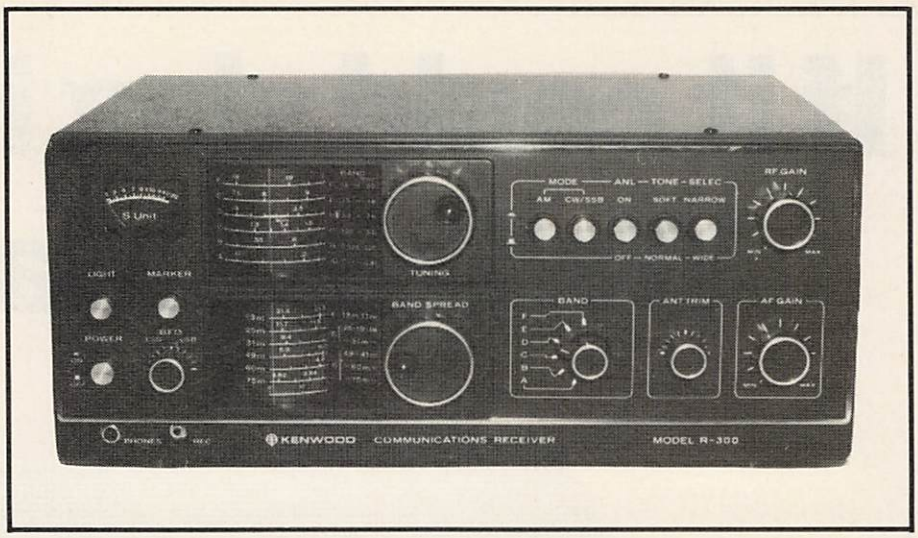
At least eight other manufacturers have been, or still are, in the SW portable market — Sony, Panasonic, Grundig, Philips, Toshiba, Sanyo, Sangean and Realistic.

I will now alphabetically list receivers and give non-technical details on their performance.

I will also list any bad points along with what you would expect to pay on the secondhand market for a given radio, however, prices do vary so take the value I give as only a guide.

**Left — The Icom IC-R71A, arguably one of the best general coverage receivers currently available.**

**Right — The Kenwood R-300 is an oldy but a goody. First released in 1977 it is now worth between $150 and $200.**




## ICOM

Believe it or not but Icom is a relative newcomer to the SW receiver market.

In 1983 Icom released its IC-R70 'communications' receiver. Aimed more at the Amateur Radio Operator than at the general listener, it was regarded by most critics as a good performer, however, its tuning system made general coverage tuning a little awkward with things such as its automatic selection of USB when tuning above 10 Megahertz or LSB when tuning below 10 MHz.

It did not take long for Icom to realise its problems with the R-70 and in 1984 it released the Icom IC-R71/A. This set solved all the problems that were associated with the earlier R-70 and apart from a simpler tuning system, Icom added keypad tuning, 32 tunable memories and offered such options a remote control and voice announcement of the frequency received.

In all the IC-R71/A was an excellent improvement over the R-70.

**PRICES Icom IC-R70 . . . $600/$700 IC-R71A $700/$900**

## KENWOOD

Kenwood has been manufacturing receivers for a long time and has enjoyed an excellent reputation for producing quality receivers at a reasonable price.

In 1976 the company released the QR-666 analogue-only readout receiver covering 170 kHz to 30 MHz with dual conversion circuitry. It used bandspreading and considering the state of technology at the time in respect to consumer SW radios it was worth purchasing — a year later Kenwood updated the QR-666 and renamed it the R-300.

In 1979 they released their first general coverage receiver with digital readout — called the R-1000, it was regarded as an excellent performer and had no major faults although some have pointed out that despite having an inbuilt clock it's only a 12 hour (not 24 hour).

Another advantage the R-1000 had was an accurate (+- 10 kHz) analogue dial which helped its coverage of 200 kHz to 30 MHz.

In 1982 Kenwood released the R-600 which was a low cost receiver with digital display, it had few features but it was value for money with continuous coverage from 150 kHz to 30 MHz.

In 1984 Kenwood, in partnership with Toshiba, brought out an 11 band portable radio called the Kenwood R-11 or the Toshiba RP-F11.

It had nine SW bands covering all the major international broadcasting bands in the AM mode only plus coverage of MW and FM — another model with LW (Longwave) coverage was also released. About the size of a large paperback book this set offered good audio for its size.

In 1985 the company brought out the R-2000 offering digital frequency readout to the nearest 100 Hertz, ten memories, two digital 24 hour clocks and continuous coverage from 100 kHz to 30 MHz. This set is an excellent receiver, however, some critics suggest that the 50 Hertz minimum tuning step is too wide for CW listening.

But, Kenwood DOES listen to criticism!

In late 1986 they released a direct competitor to the Icon IC-R71 — called the R-5000, it featured 100 memories, continuous coverage from 100 kHz to 30 MHz, digital frequency display to the nearest 10 Hertz (SSB/CW), two 24 hour clocks, on/off timer, dual antenna switch, four position selectivity switch (irrespective of mode), notch filter that works in the AM mode on most hetrodyne interference and many other features.

Performance of this set is simply 'EXCELLENT' and a comparison with the professional JRC NRD-525 receiver revealed no significant differences between them in receiving stations.

**PRICES: QR-666/R-300 $150-$200, R-1000 $350-$450, R-600 $200—$250, R-2000 $500-$600 and the R-5000 $900-$1000.**

## NATIONAL/PANASONIC

Panasonic, as it is now known, produced a wide variety of reasonable quality portable sets during the late 1970s and early 1980s.

Unfortunately, this company has now almost dropped out of serious SW receiver production leaving most of the consumer SW market to SONY.

In 1975 National released the DR-22, frequency coverage was from 3.9 MHz to 28 MHz plus FM and MW with an analogue-only readout (+- 10 kHz) only. This set also featured a built-in rotatable MW loop antenna — which is something you don't see now on most radios — while a BFO resolved SSB signals quite well and a wide/narrow filter helped to reduce any adjacent channel interference.

National Panasonic was deeply involved in serious SW receivers in the 1970s and, as a result, the RF-4800/DR-48 receiver was released in 1977 featuring a digital display accurate to the nearest kHz (something quite new then!!!). It covered 520 kHz to 31 MHz continuously plus FM with bass/treble controls and a frequency stability of +- 500 Hertz (after warm-up).

This set was not well received by some reviewers as the RF-4800 had a poor dynamic range (overloaded by strong MW AND SW stations) — also featured was SSB reception, wide/narrow filters and antenna trim control.

A receiver called the RF-4900/DR-49 was released in 1980 and this unit was very similar to the RF-4800/DR-48, but, had improvements such as less frequency drift. Overall, however, it's not much better than the RF-4800/DR-48.

In the late 1970s the company released three portables with digital readout — they were the RF-2600/DR-26, RF-2800/DR-28 and the RF-2900/DR-29.

All provided decent performance, however, some were known to produce images four or six MHz below or above the fundamental frequency being received, but, this did not harm actual reception in the SW broadcasting bands and all had digital readouts and received SSB.

One receiver from the National Panasonic range to avoid is the RF-6300, selectivity was not up to scratch

**(continued over)**

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# SHORTWAVE RECEIVERS

**(continued)**

and overloading was a problem — also to be avoided is the RF-799 (National's answer to Sony's ICF-2001) — although it features digital readout and keypad tuning its internal circuitry was not good and it appears to be a rush job by that company to compete with Sony.

The RF-B300 is a much better set, released in 1983 it has coverage from 520 kHz to 30 MHz with digital readout and reasonable SSB performance, but, no keypad tuning and no memories, and, as with most National radios, a built-in telescopic antenna is supplied.

In 1983 it released the RF-B50, an analogue dial-only portable with coverage of the major international broadcasting bands. Although it was compact, competition from other manufacturers' models (such as Sony's ICF-7600A) forced it to be deleted from Panasonic's line reasonably quickly . . . also in 1983 it was decided to release a table top model, but, one that could easily be used as a portable.

The RF-3100, which featured continuous coverage from 150 kHz to 30 MHz coverage, SSB tuning and S-Meter, designed to work at its best with its inbuilt whip antenna, performed well for the price.

In 1984 the RF-9 mini-portable was launched. Housed in a very small case, its performance was not up to scratch, but, considering its size it could be considered for purchase if that was of importance.

Now to the other end of the scale: The RF-B600 is a large table-top portable with nine memories, 150 kHz to 30 MHz coverage, SSB tuning, 100 Hertz tuning steps and scanning modes.

However its release was also coincidental with Icom's and Kenwood's much better offerings that were on the market in 1984. The RF-B60 was reasonable but not the best.

A two year gap between new receivers was broken when, in 1986, the RF-B60 was given a chance to prove that Panasonic was still a force to be reckoned with in the SW radio receiver scene.

It had 36 memories (nine memories for SW bands), continuous coverage from 155 kHz to 30 MHz, 24 hour clock built-in and keypad tuning. All this came in a small portable but without SSB tuning.

A downgraded version of this receiver was also released. Called the RF-B40, it had 27 memories and tuned in 5 kHz steps. Both are OK performers.

Since 1986 Panasonic has been quiet, but, two small portables have been released — the RF-B10 and RF-B20 are both analogue-only readout receivers with the RF-B20 the better of the two. No memories or digital readout are on these sets.

One set not mentioned in the Panasonic range is the RF-9000 which is a monster. It weights in at over 20 kilograms and its size is 520 x 362 x 206 mm (WHD). However, its performance is not much better than some smaller portables and the money would be better spent on a set such as the IC-R71 or R-5000.

**PRICES: RF-2200 $150-$200, RF-4800/4900 $250-$300, RF-2600/2800/2900 $200-$300, RF-B300 $250-$300, RF-3100 $250-$300, RF-B600 $400-$500 and Panasonic's other portables can range from $90 to $300.**

### REALISTIC

For those with little spare cash the DX-160 is a model to consider. Released in the mid-1970s, it has general coverage tuning (150 kHz to 30 MHz), SSB reception with BFO tuning, antenna trim control, S-Meter and RF gain control.

Because of its design it suffered from overloading, images and poor SSB reception. However, in saying that, it should also be said that it gave many people their first look at the exciting world of SW and to many it still does.

In the late 1970s the DX-200 was released. This set, actually a better buy than the DZ-160, features analogue tuning, 500 kHz crystal calibrator bandspreading for the Amateur and Broadcasting bands.

In the mid-1980s Tandy gave us the DX-400 (manufactured by Uniden in Taiwan) — it was the first serious SW radio released by Tandy after a break of several years.

Featuring keypad tuning, frequency coverage of 150 kHz to 30MHz, six memories and three step attenuator, it was a good performer. And in 1987 Tandy released the DX-440 (manufactured in Taiwan by Sangean). It has nine memories, 24 hour clock and coverage of 150 kHz to 30 MHz plus FM. According to most reviewers it's good value for money.

**PRICES: DX-160 $90-$130, DX-200 $150-$200, DX-300/302 $200-$250, DX-360 $50-$70, DX-400 $250-$300 and the DX-440 $300-$350.**

***This is the first of a two-piece report — the second part will appear in the next issue.***


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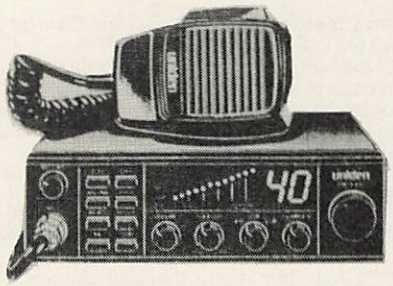

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## Rod Fewster with the

# QUEENSLAND SCENE

**In the last issue of CB Action George McCarthy asked the question, AM or SIDEBAND?**

It was a trick question, but some of our readers saw through it and recognised the accompanying photograph on page 11 as a shot of the newly-released multiple-sideband rig from Dai Nippon Donkyo even though it had been disguised with an Electrophone nameplate.

The four buttons above the mike socket give it away to the experienced eye.

The "DUP" button activates the Double Upper Passband mode and the "OS/GS" button lets you choose between the Other Sideband and Greater Sideband.

"SCAN" (Sideband CANcel) cancels all sideband operations and switches the rig into the AM mode, and "NORM" (NORMal . . . what else?) allows the rig to transmit and receive on the "old" upper and lower sidebands (both at the same time so you won't miss any calls from CBers who haven't yet upgraded to the new technology).

The built-in echo mike is activated with the MEM (Modulate Echo Microphone) button, and in case you're wondering about the two extra pins in the mike socket (CB mikes usually have only four pins) they control the built-in rotator. Not much use unless you have a beam I suppose, but then, anyone serious enough about the hobby to buy one of these little beauties is sure to have a beam or two hanging off the roof.

As you can see from the photo the SQUELCH control incorporates two new functions . . . "PUSH" (Process Upper Sideband Hetrodyne) which gets rid of annoying "howl" from nearby stations working on the "old" upper sideband while you're in "DUP" mod, and "DIM" (Double Image Modulation) which saves those Good Buddies who always repeat everything twice from having to repeat everything twice from having to repeat everything twice by automatically repeating everything twice.

For those newcomers to the hobby who aren't familiar with CB technical terms, the "VOLUME" knob makes the noise go louder and softer, and in the "OFF" position it makes it go so soft you can't hear it at all (you're a sarcastic bugger young Rod — but you're right — we stuffed up — Ed).

★ ★ ★

**Periodically we cop a fairly substantial blast form the media about how scanners are used to intercept confidential phone calls or how crooks utilise CBs, two-way radios and/or scanners tuned to police frequencies to help them evade capture while engaged in their dirty deeds. Some of these blasts (the famous nasty four-letter words used by politicians in a carphone conversation, for example) go on for days or even weeks.**

Recently a fleeing criminal was apprehended by the Queensland Police after his vehicle was spotted and its whereabouts reported by a guy who'd been listening to the pursuit on a scanner.

This raises a point which could have legal eagles scratching their heads for some time. According to the strict letter of the law it would seem that the scanner enthusiast could have been charged with a breach of the Act for divulging the contents of the police transmissions, even though he divulged same to the very people who had transmitted the information in the first place. Not that any court in the land would have convicted him, mind you.

I'm told the police were very appreciative of the assistance, but the fact that information provided by a naughty scanner user led to the arrest rated only a brief mention in the press.

"The evil that men do . . . "

★ ★ ★

**There's been quite a bit of media coverage lately on the subject of boaties using 27.880 MHz (Channel 88) as a chit-chat channel despite numerous appeals from the Coast Guard, Air-Sea Rescue and Yacht Clubs to keep the frequency clear for calling and emergency traffic.**

I've had a bit of a listen myself since the problem was brought to my attention, and it's obvious that the situation has got out of hand. If you were trying to call for help you'd have a full-on battle to be heard above weekend Captain Ahabs crapping on about who makes the best outboard motor or which is the best-tasting beer, not to mention the crews of Taiwanese trawlers babbling away on the lower sideband while they pinch our fish.

The way propagation is at the moment it's not only local boaties and foreign trawlers you'd have to compete with either. A handful of American and Mexican pirates seem to have laid claim to the "eight hundreds" (occasionally you can hear them on the legal channels telling their contacts to "QSY twenty-seven-zero" or whatever) and I've heard Aussie SSB stations talking with these guys between 27.800 MHz and 27.900 MHz several times over the past few weeks.

This just isn't on!!

I imagine that the offending Aussie stations are newcomers to the pirate scene, as there was a gentlemen's agreement in force during the last cycle which made 27.800 MHz "top channel" and very few old-time Australian pirates broke it . . . not because illegal operation in this part of the band was probably the surest way of attracting the unwanted attention of the dreaded RI but because they had too much sense and social responsibility to sit there deliberately interfering with channels which could be needed to save someone's life. The Yanks and Mexicans and other assorted foreigners couldn't care less about the "eight hundreds" back then, and by the look of it they still don't and probably never will.

I'm not knocking the efforts of the Coast Guard, Air-Sea Rescue groups, etc. they do a bloody good job under trying and often dangerous conditions . . . but I think anyone who'd risk his life and the lives of his family by relying on 27 MHz to call for help if his boat was sinking should be locked away for the good of the community in general for being so bloody stupid.

It's no secret that I regard the 27 MHz Marine Band as a crock of the proverbial doggie-doo, but that's beside the point.

It's way past time for the powers that be (both Maritime and Radiocommunications) to get their marbles in one bag and make DECENT radio equipment a compulsory requirement before ANY vessel is allowed to put to sea but, until they do, the frequencies between 27.800 MHz and 28.000 MHz are a definite no-no for pirates and Channel 88 should be left alone by boaties.

★ ★ ★

**RIs recently knocked off a UHFer (yet to appear in court) alleged to have persistently jammed the Dalby 4/34 repeater, and recent busts of Brisbane out-of-banders have resulted in heavy fines and court costs, over $100 in a couple of cases, plus forfeiture of a lot of expensive amateur equipment.**

One RI, trying to figure out how to program the memory channels on one piece of confiscated exotica, was heard muttering something about asking the beak to order forfeiture of the instruction books as well next time.

★ ★ ★

**Looks like even the Government Printer fell victim to a Queensland Bad Buddies' hoax.**

A misprinted DoTaC brochure originally indicated that 27.335 MHz (Channel 35) was a designated calling channel (to the accompaniment of loud cheers from various ornithological specimens) but it's been corrected and now clearly states that 27.1555 MHz (Channel 16) is the only designated SSB calling channel.

If you listen carefully when the skip's running hot you'll hear faint whimpers from the "Make-35-A-Call-Channel" wimps as they tune up their antique Kenwoods and Yaesus on the AM call channel.

★ ★ ★

**New to the Australian CB scene this year, in name at least, is COMMEX.**

COMMEX transceivers are from Ranger Electronic Communications of Taiwan, a major CB manufacturer second only to Uniden in world markets (the name "Ranger" is already being used by someone else in Australia, so don't get confused).

Although multi-mode multi-channel rigs like the Ham International, Super Star, and Galaxy breeds are probably their best-

known products, Ranger also produces a range of legal-specification AM, AM/SSB, and UHF transceivers, some of which have already been seen in Australia under various brand names, and commercial and marine transceivers.

First releases on the Australian scene under the COMMEX brand will be a UHF-CB mobile rig to be called the "Bushranger" and a 40-channel UHF-CB hand-held. I've used the DoTac type approval prototypes and they're GOOD! I even managed to pull them to bits and have a squiz at the insides. The workmanship is top-class. I've got one of each from the first shipment earmarked for a full test report, maybe even in this issue if they turn up in time, and space permits.

What makes the COMMEX operation unique (so far) in Australia is that the original Brisbane-based importer of Ranger gear is now a subsidiary of Ranger Electronics.

This gives the manufacturer an enormous price advantage over other imports. To put it simply, they've virtually eliminated a step in the price structure by selling their products to themselves.

I said "so far" because usually-reliable sources in the indus ry tell me that Uniden, undisputed Numero Uno of the CB scene world-wide, is currently making overtures to purchase its Ausralian importer, Santronics, and that Uniden is so keen to make sure the deal goes off smoothly that Fujimoto-san, Uniden's Top Gun, will be coming to Australia to negotiate personally.

Two of the most important selling points of any product are price and quality, and for years Uniden has had an edge in the quality department. When I visited the Ranger factory in Taiwan late last year I was shown some of its newer products . . . rigs which were subject to upgraded quality control. Good gear, well made, and priced right. The marketing people openly admitted they were chasing a large slice of the Australian market, but with typical Oriental inscrutability didn't let on that they intended to start their own operation here.

Ranger reckons it can now equal Uniden's undeniably excellent quality, and its projected prices are considerably lower than Uniden's for equivalent models.

If Uniden does set up shop in Australia, be prepared for the Battle of The Giants!!

There could be a few bargains looming on the horizon.

★ ★ ★

**OK. Here we go. The promised response to Robert (don't call me "Bob") Smith's open letter to me published a couple of issues back.**

Robert seems to have vanished into the woodwork. Perhaps he's giving me the cold shoulder because Len (The Boss) Shaw decided against publishing a petition he sent to CB Action. Never mind. We can't please everybody. Me . . . I don't even try!!

I'm not going to comment on Robert-not-Bob's questions about my opinions of emergency monitors. My English just ain't good enough to compete. Instead I've included part of another of his letters to DoTaC and CB Action (unedited apart from the deletion of the first few lines) to give readers a better insight into what he and his mates are all about, and I've added a few comments of my own.

One statement in Robert's open letter to which I do take exception is that some years ago I was "giving it to CREST on a regular basis." I never "gave it" to CREST at all. I did "give it" to the monitors Robert referred to as "ego-trippers" and "Glory Boys", but never to CREST as a whole. As a matter of fact a number of the better-quality CREST monitors of the day wholeheartedly supported my "giving it" to the dorks and wankers within the organisation, and supplied me with information to "give it" to said dorks and wankers even harder.

Anyway, here's Robert's other letter:

" . . . we are not just a group of ratbags trying to stir the possum. (That's what is known in Queensland as a Sir Johism . . . RF) We believe we have a valid case for the abolition of 'emergency numbers' and the re-allocation of UHF-CB channels 5 and 35 for utilisation as 'public access' repeaters, and we present the following facts to reinforce our case.

1. Between January 1988 and August 1988 the usage of the Brisbane 5/35 repeater was monitored with a voice-activated tape recorder for 10 periods of seven days each, 24 hours per day. The repeater was used for a combined total of only eight hours 11 minutes 52 seconds (including 'no-voice' activations) during the survey periods which covered a total of 1680 hours. It was inactive for over 99.5 per cent of the time. During this 8.2 hours of activity not one single transmission was made for emergency purposes. Apart from numerous 'no-voice' activations the repeater was used solely by emergency numbers either logging on, logging off, greeting one another, farewelling one another, or calling another monitor for the purpose of switching to another

**(continued over**


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## RIG REVIEW

# DICK SMITH HCA-804

**The Dick Smith company is arguably one of the best known electronic names in Australia and, although Dick Smith is no longer associated with the company which bears his name, the company's products continue to be good sellers.**

The HCA-804 is one of the relatively low cost CB units marketed by this company and as such, cannot be fairly compared with transceivers costing considerably more.

The rig is quite attractive with an all steel case and a plastic front panel sporting the usual black PVC covering with lettering and decoration highlighted with red and white.

Being an AM only transceiver there are a minimum number of controls — on/off volume control, squelch and a pair of buttons for up/down channel selection standing in for the more familiar rotary channel switch.

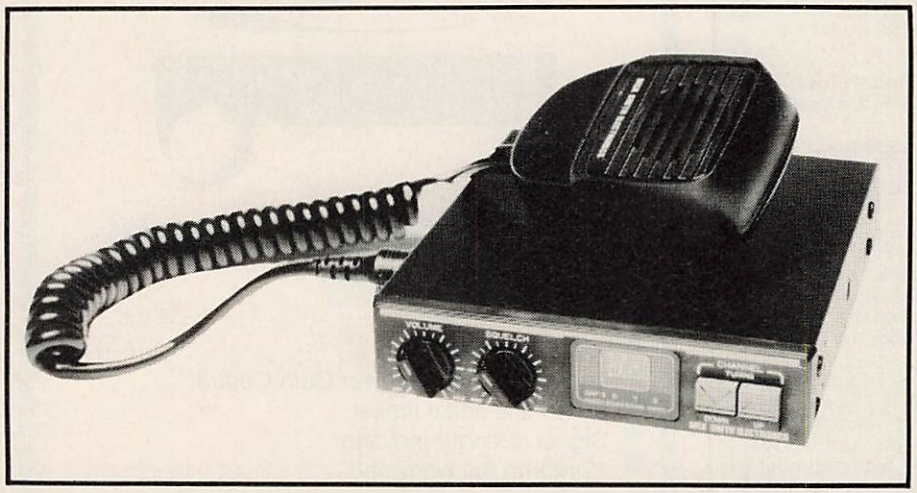
The microphone is the push-in five pin DIN type — without lock — and is located on the left hand side of the case. The seven segment LED channel display is brighter than many of the HCA-804's budget priced rivals, but, it could still do with a bit of a boost in intensity for use in sunny conditions.

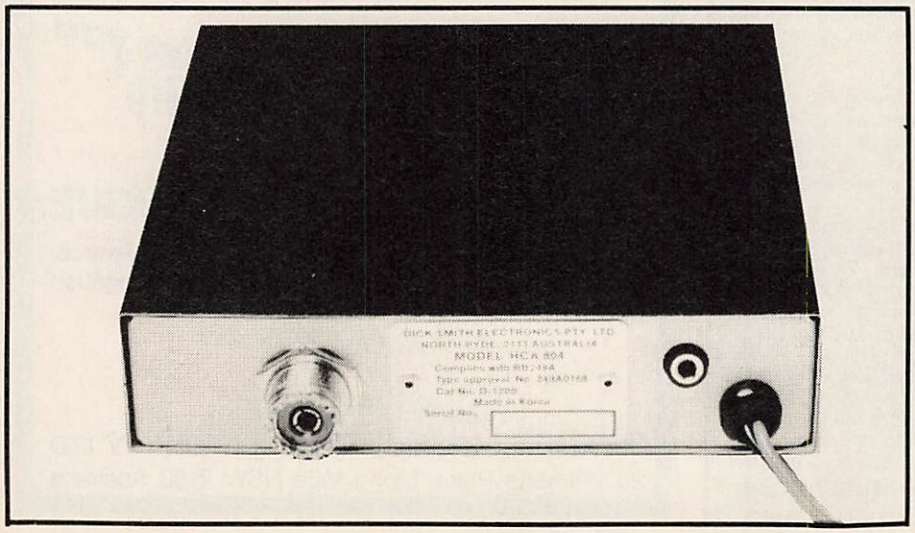
Under the display are four LEDs to indicate received signal strength and transmit power — again, pretty much par for the course.

An extension speaker socket is provided on the rear panel but no PA facility is offered on this model.

Overall physical size is 130mm wide, 30mm high and 140mm deep, really quite compact and also light weight — the attributes necessary for easy installation in many modern cars where plastic trim is often the only anchoring point available.

Internally, the construction is quite neat and tidy with the components generally fitted snugly into position. Soldering is quite good in most respects and inspection with a four times magnification eyepiece detected no tatty joints which we usually find going hand-in-hand with economy priced equipment.





The HCA-804 outputs a healthy 4.2 watts of power and the microphone modulates the signal to 100 percent with relative ease, however, although the modulation sounds a little 'thin' but it is quite acceptable at the receive end.

The five minute transmit test saw the power drop slightly and the case was noticeably warmer at the end of the test period, however, the rig passed the test with flying colors.

The receiver has very heavy noise limiting circuitry and with the rig turned on, but, with no antenna, there is virtually no speaker 'hiss' to be heard — even with the volume turned up high.

Sensitivity appears quite good to the unaided ear with levels as low as 0.1 microvolts being audible, however, the test gear was not quite as optimistic and it maintained that 0.7 microvolts was needed for the 12dB SINAD figure to be reached.

While the receiver sensitivity is quite good, the resistance to strong signals on near by channels leaves some room for improvement, however, this would probably only be a problem should the rig be used as a base station — with mobile use one would expect only occasional inconvenience and general rejection was on a par with other similarly priced rigs.

The speaker audio output level is ample for normal conditions but, as with virtually all receivers, we found that sound from an extension speaker was much more flattering to the rig.

The squelch control works well and has plenty of hysteresis — opens quickly and remains open for a short period after the signal disappears or becomes quickly weaker in strength. It can be set to open for a signal strength of 0.4 microvolts and at maximum setting it requires about 100 microvolts to break the threshold, but once open, the signal strength can drop to around 50 microvolts before the circuit 'shuts the door'.

### SUMMARY

The Dick Smith HCA-804 is typical of the current number of budget priced 40 channel AM mode CB radios available on our markets. The construction, materials and performance are consistent with low production cost electronic equipment, however, this rig probably scores better than a few others we have seen in recent times.

It is difficult to predict reliability of such equipment, but, we cannot see why this rig would not offer good reliability for the following reason: considerable experience indicates that the major unreliability factors with CB radios are poor soldering and flimsy mechanical construction.

The HCA-804 suffers from neither of the above.

Rod Fewster with the

# QUEENSLAND SCENE

**(continued)**

channel. It is reasonable to assume that the pattern of emergency repeater usage is similar throughout Australia.
2. Most Brisbane UHF-CB users are of the opinion (with some justification) that calling for assistance on the 5/35 emergency repeater is a waste of time. It is reasonable to assume that this opinion is common throughout Australia.
3. A recent random survey of 60 regular UHF-CB users in Brisbane found that every single one would rather break into one of the public access repeaters to request emergency assistance than attempt to use the 5/35 emergency repeater. It is reasonable to assume that this lack of confidence in emergency repeaters is common throughout Australia.
4. It is a fact that almost all calls for assistance transmitted on UHF-CB in the Brisbane area are transmited on one or other of the public access repeaters. The 5/35 emergency repeater is virtually ignored by most UHF-CB users. It is reasonable to assume that a similar situation exists throughout Australia.
5. In order to provide full coverage of the areas within reception range of the Brisbane 5/35 emergency repeater it is necessary to monitor both the uplink chanel (35) and the downlink channel (5). This is impossible with a single transceiver, and there is no evidence to suggest that Brisbane emergency monitoring bases are equipped with more than one UHF-CB transceiver. It is reasonable to assume that a similar situation exists throughout Australia."

Well, there you have it. Now you all know as much about what makes Robert-not-Bob tick as I do.

I didn't listen to the entire tape but I've heard part of it. As Robert points out, 5/35 seems to have degenerated into a chit-chat repeater for the selected few.

Robert told me that to his knowledge at least nine traffic accidents needing police and/or ambulance attention were reported over repeaters 1/31 and 7/37 during his survey period, and none on 5/35. I'd say nine would be a very conservative figure. I phoned in two emergencies myself last year, one requiring an ambulance and the other requiring the fire brigade, after taking calls for help on 7/37, and I don't listen very often. Any regular repeater users care to shed more light on this?

As for needing two transceivers to monitor 5/35 properly . . . I agree that monitoring 5 and 35 is desirable, but quasi — simultaneous monitoring of both uplink and downlink is possible with a single transceiver (the Electrophone TX-472 for instance) if it has scanning capabilities. Perhaps Robert should establish what type of transceivers are being used by emergency monitors before taking potshots (maybe he did. I don't know.)

OK. The battle lines are drawn. On one side we have Robert W Smith and his band of hobbyist UHFers wanting to turn the masses loose on 5/35 and shift the UHF Emergency Channel to 9 (he didn't say that in the letter but that's their aim) and on the other side we have various monitoring groups who no doubt would like to maintain the status quo.

From where I sit, looking at it objectively, Robert's group doesn't seem to have anything to gain if 5/35 is opened up for public use. UHFers generally would benefit from the freeing up of the 1/31 and 7/37 repeaters as the workload on each of these would be reduced significantly. Maybe Robert's just a philanthropist at heart.

On the other hand, monitoring groups have a vested interest in trying to keep 5/35 exclusive. Even though this repeater seems to be seldom used for the purpose for which it was allocated, the mere fact that it exists and is officially sanctioned and protected adds prestige and legitimacy to emergency monitoring, at least in the eyes of the monitors themselves.

I put a lot of time, effort and money into helping establish Brisbane 5/35 years ago and I like to think I did the right thing, but I'm not one-eyed about it. If it really is, as many people seem to think, a waste of valuable and much-needed spectrum space which should be re-allocated for other purposes, I'll back off gracefully and admit I made a mistake.

How about some input from UHFers? Not only from Brisbane . . . from anywhere. At present the use of 5/35 is restricted to emergency traffic Australia-wide whether you have a repeater in your area or not. Monitors, hobbyists, commercials, RIs, or whatever category you fall into, drop me a few lines and let me know what you think, for or against, about the 5/35 Emergency Repeater Syndrome.

**Rod's address is P.O. Box 29, Kallangur 4503. Q.**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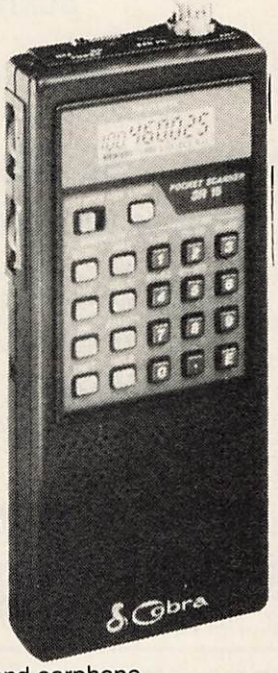

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The mutual agreement of the offer to exchange a QSL card to confirm the contact you have just established is a commitment that should be taken seriously — either you QSL or you do not — there are no in betweens at all.

None whatsoever.

QSLing and QSL cards have always been a controversial subject among DXers and usually takes place between local operators as they compare notes on the days DXing.

Newcomers may ask, "What is the main object of the QSL card, and why do people go to great lengths to exchange them?"

The origin of the QSL card goes back many years to the times of spark gap radios when they were used by amateur radio operators as proof of contact.

QSL cards were in use then and remain in use today. QSL cards would have to be one of the few things that have not changed throughout the years of radio's technical advancement in this modern society.

The main purpose of the QSL card is the same today as it was in years gone by — that is to establish in material form the proof that the two-way contact between stations did in fact take place.

The QSL card is sort of like a souvenir of the contact, much like sending a postcard to family and friends while visiting abroad or interstate.

It means the same thing, proving that it has been done, you have been there and done that — so to speak.

Not only do QSL cards look good on the shack wall but they are also an important factor in compiling records for contacts made. This in turn comes in handy when applying for awards issued by various radio societies and clubs such as the Wireless Institute of Australia (WIA) or the American Radio Relay League (ARRL).

To apply for an award, whether it be Worked All States Of Australia or whatever, you have to show the radio club proof that you have actually contacted the places claimed that qualify you for the award — without the cards you would be unable to do this.

Over the past four or five years some CB radio clubs and 11m band DX groups have copied the amateur radio system of issuing awards to the members for achievement in DXing pursuits.

One such club is the "Gruppo Radio Italiano", better known as the "Alpha Tango" club. This club has members worldwide and has modelled its awards on the amateur radio system.

Awards are made to various members of the club in the form of handsome wall certificates, similar to a diploma, or in trophy or plate form. For example, if you have worked 15 countries in Europe and have them confirmed by way of QSL cards, then you are eligible for the European DX Award — providing of course that you are a member of the "Alpha Tango" DX group. The system is simple and all an Australian member of this club needs to do is submit an application, along with a photocopy of his 15 QSL cards from contacts with 15 countries in Europe, to be well on the way to earning the award.

As you will realise, designs, sizes and formats of QSL cards vary greatly — from individual personalised cards through to the run of the mill club type cards. Overall they serve the same objective and that is to confirm the radio contact previously established on the band. The club type cards are usually basic, being of the same design and all the member has to do is apply his own callsign to the card.

Personalised individual cards offer more variety and have a certain character about them.

If you are going to have your own cards printed there are a number of things that must be taken into consideration.

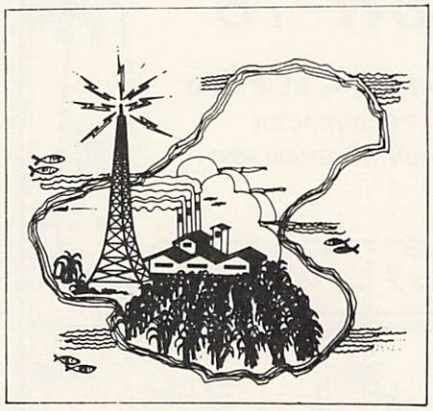
One of the most important things is size — what size do you use? Years ago there was a standard size for a QSL card and that was 14cms wide by 9cms in height. This size fits into any standard domestic or airmail envelope — exceed this size and you will find yourself shopping around for non-standard envelopes which will cost you more to post and are often difficult to obtain — especially in airmail format.

The next step is choosing a good design for your card — something that is individual and not copied from someone else's QSL card.

Over the years I have received many great personal designs and also some pathetic ones.

Another point, too, is do not over do it — make sure your callsign is the main feature of the card and not buried in assorted information.

**(continued over)**



NEGROS ISLAND

DU6 RCR
P.I. -105

QRA: RENE C. RODRIGUEZ
QTH: 17-12 ANDALUCIA ST.
ERORECO, BACOLOD CITY
PHILIPPINES

To radio .....

DATE 5/13/7X ..... GMT .....

MHz 27.149 Mode LSB RST 5/5-

Tx 180 W Rx 5/2 Ant G.P.

VY PSE QSL TNX — Vy tnx nice qso GL and DX!

NEGROS ISLAND — op.

***This card from Negros Island is well laid out with all the relative information on the face.***

# GUARANTEE A 100% QSL RATE

**(continued)**

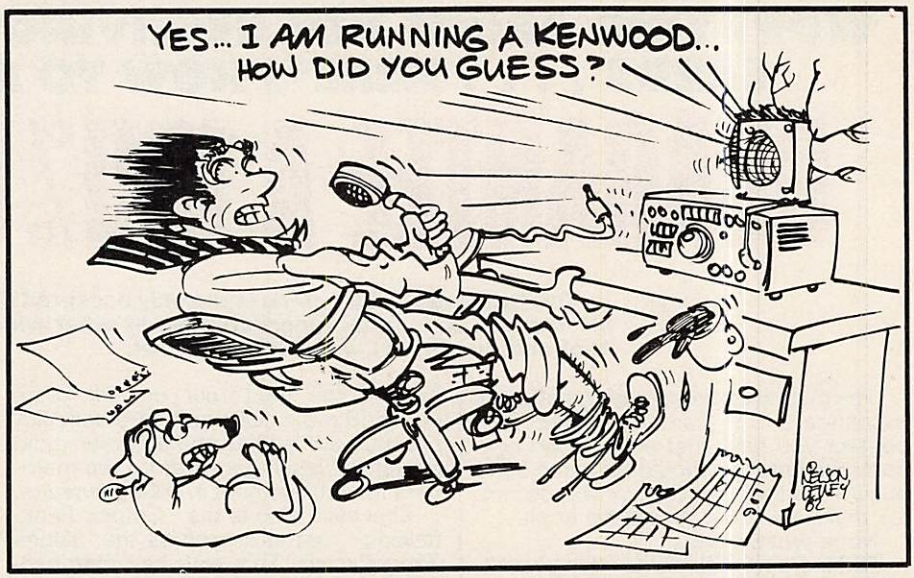
After you have chosen your design, decide whether you need the card to be printed on both sides, or is it possible to have everything on the face of the card as printing both sides costs more.

The final step is choosing the colors and the type of paper thickness you require. The more colors you want the more expensive it is going to get as it makes more work for the printer. Paper thickness and finish vary too, with glossy cards being considerably more expensive than matt.

Once having got all the fundamentals into place, re-check everything to see if all the information you want printed on the card is 100 percent correct and legible. Your callsign, address and contact information is essential. Make sure that everything is in correct order just like the sample cards featured in this article.

If often helps if the printer you are dealing with has previously printed radio cards, if not, take some samples of other people's cards along to give him an idea of the layout you desire.

After you get your cards back from the printer, check them for errors, especially in the address and callsign department. There is nothing worse than going into a frenzy and sending them out only to later find that your post office box number was printed incorrectly.

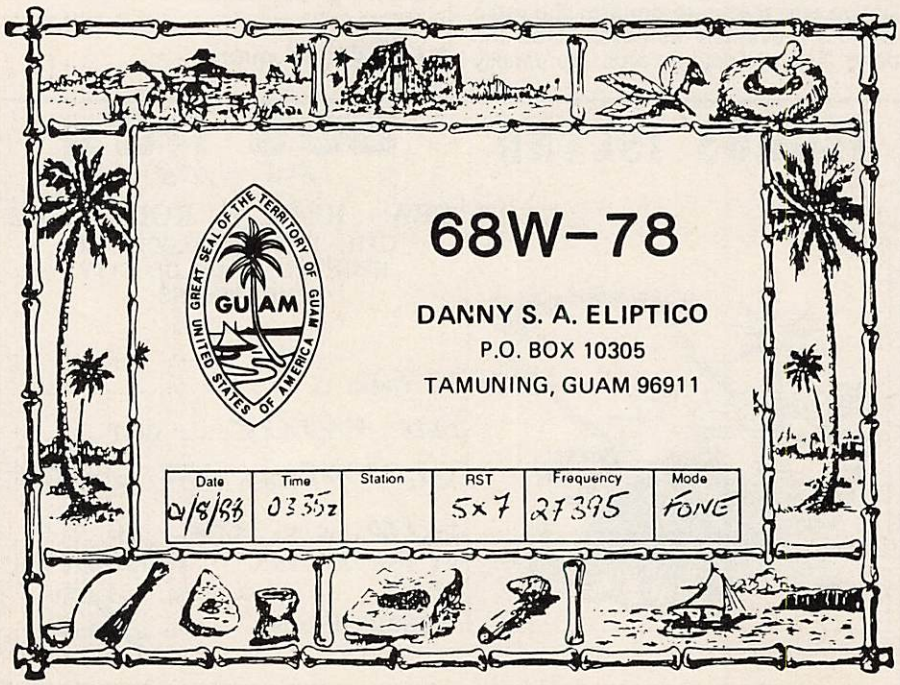



***A quite comical card from Canada, the only problem is the cartoon caption takes up the whole face and leaves little room for other details which have to be furnished overleaf.***

Now that you have your cards with your personal trademark on them you are an individual in the world of DX.

Reflecting back on the "Ten Commandments" of the DXer, if you have promised a card to a DX contact then send it.

***A lot of thought definitely went into this card and even though it is a little over size (14cm wide x 10.5cm high) it is still a good card with everything blending in and nothing clashing.***




An efficient DXer makes the cards out at the end of the DX contact and posts them as soon as possible. Along with this he keeps an accurate log of the contacts made and movements of QSL cards both sent and received. This in turn gives you a good reputation as a DXer and QSLer — not only for yourself but for your country as a genuine operator and a good QSLer.

I personally believe that you should avoid QSL Swap Clubs. These clubs exchange cards via the mail system even though no actual on air radio contact has been made. I personally despise these clubs as it leaves the door open for fraudulent cards to be made out when applying for DX awards.

If you must swap a card with someone you haven't personally spoken with on air then mark out the spaces where the report goes in — either write "SAMPLE ONLY" for example — or place a line through the report details. This makes it null and void and prevents the recipient from filling in false details.

From time to time most DXers receive QSL cards in the mail from stations claiming to have worked you, however, after checking the logs you find that they are not recorded. A good DXer always records contacts where QSLs are mentioned — if the station in question is not in the log then what you have is called a "dummy card".

I have had them myself on numerous occasions.

Someone has heard you working a station and has taken the opportunity to send you a card in the hope that you will return one — even though they have not worked you.

The best place I find for these cards is straight into the garbage bin — no second thoughts given at all — if they are not in the log I haven't worked them, it's as simple as that!

The only exception to the rules on QSLing just discussed is when you receive a card from a shortwave listener (SWLer). A shortwave listener is a per-

son who doesn't use a transceiver, but, only a communications receiver. These people mostly confine their listening activities to the international shortwave bands and utility frequencies, but, from time to time monitor the CB frequencies.

If the card received is in fact from a SWLer it will clearly state just that and outline that he has only monitored your signal and not spoken with you.

In such a case, a return QSL card would be in order thanking him for his RECEPTION REPORT and not contact — it is also a good idea to mark out the readability and strength section of your card just to be on the safe side.

Understanding the fundamentals of good DXing is relatively easy as most of it is just plain old commonsense.

Trial and error is another way of learning the procedures of good DXing as well all learn by our mistakes — some take a little longer than others.

Run your radio station well and it will serve you well, keep a regular check on your SWR and be wary of buying "add ons" such as power microphones and linear amplifiers.

These gadgets often produce nothing but trouble by either causing splatter and spurious emissions on the band or creating TVI and BCI problems — a sure way of guaranteeing a visit from the appropriate authorities.

## QSL CARDS UPDATE

*To get an update on the current costs of QSL cards we contacted BINT Services who are one of, if not, the only specialist QSL card printers in Australia.*

*This company has been specialising in QSL cards for about eight years.*

*They now stock three pre-printed types of cards which are sold ready for the operator to fill in the details.*

*The most basic card is printed on matt card and seals at 100 for $23 while the other two stock cards are both printed on high quality gloss card, one having the Australian flag (in color) on one side and station information on the reverse while the other is a two color single sided card.*

*BINT also prints custom cards at prices ranging from $110 for 500 upwards.*

*One thing you can be sure of with BINT is that you will get a top quality card at a very competitive price.*

*As proprietor Maureen S. says, "the cost of card stock has increased enormously during the past couple of years and it is going to continue increasing in the future.*

*"We have stopped printing four color cards as the costs were simple beyond the reach of the average operator.*

*"We sell a large number of pre-printed cards, but, there is also a big demand for personalised cards — particularly from amateurs.*

*"Because we buy our stock in large quantities we can keep our prices well below the comparative quote from another printer and this is reflected in the number of clients who initially feel our prices are too high, but, after obtaining prices elsewhere generally finish up ordering from us.*

*"Because of the costs involved, we have a 500 card minimum order for personalised cards and this is why we also stock the pre-printed ones which are ideal for operators only requiring a couple of hundred cards."*

*If you require any further information on QSL cards from BINT Services, their address is P.O. Box 323, Cheltenham 3192, Victoria — please enclose a 78 cent stamp to cover return postage.*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# SYDNEY SCENE

## by Steve Griffin

**Many UHF users are turning to hand-held units for the sake of being able to carry them around from place to place. I wish people would understand that these units require charging when they have ni-cad batteries fitted.**

The latest whinge here in Sydney is based on this same problem.

The 'in thing' is to try and fit in as much of a conversation as possible before the batteries run flat. If this isn't bait for all the stirrers then I don't know what is.

A little message for the owners of these hand-helds is most brands have the penlight size battery pack available (cost is about $10-$20) so that you can instantly change over to it when your ni-cads need a lift. The little pack serves its purpose really well and, with this sort of emergency use, it lasts for quite a while.

I know we all hate the idea of using normal batteries, but really, what could be easier to use and obtain than penlight batteries?

★ ★ ★

The UHF fraternity is having a ball with ducting causing many openings.

Stations as far away as Coffs Harbour are accessing the Sydney repeaters. Some operators are even jamming their own just so they can hear ours.

Even the skip on SSB has been getting a little out of hand.

Interstate, and even international, stations are wiping out the locals with super-strong signals. Even while I am writing this article stations in the USA are putting calls out on 35 LSB, and getting full-on mass hysteria in return . . . never changes does it?

★ ★ ★

The latest news on a certain pirate UHF repeater is that it is still up and running and, even better still, it now has built-in sound effects. I believe that when the unit is about to cycle (the end of a transmission) it can make noises like a cow, cat, dog, etc.

It keeps them short and sweet and can be only changed at the owner's discretion. At the time of writing I still haven't heard a peep out of it, but, I believe it is only a recent addition. In case you are wondering, I don't condone this type of thing but I do see a bit of humor in its operation. Anyway, this repeater has had more praise than you could possibly imagine and I only wish that the others could get it right.

★ ★ ★

Another interesting item is a little modification to the Pearce Simpson Tomcat which will fix the constant SSB LED's. For a small radio, this unit sure has copped a lot of flak over the last couple of years. Many owners have wondered why the lights are on when there is no one on the channel.

Well, maybe it was an oversight or maybe a genuine manufacturing fault, but, the point is that no one would do a thing to rectify the problem.

OK, maybe they couldn't be recalled, but, surely they could advise owners of the fix. Well, after the last time I heard someone talk about it on air, I decided to break the silence. I realise many of the Tomcat owners may have already had their unit played with, but, if the technician was anything like a few in Sydney it probably came back just as bad.

All it takes is a couple of diodes.

Cut the track coming from the centre pin of the Rx LED level pot and fit two INS14 diodes, cathode end (banded end) towards the pot and then readjust the pot so all the LED's light up on a local signal.

You find that this will cure the problem and make the meter a little more accurate. Also, a few of the radios only need one diode, so it may be an idea to test your radio to see whether it needs one or two.

★ ★ ★

There are quite a few good radios on the market which can cover at least four hundred channels. Initially designed for 28-30 MHz (for amateur use) they are being modified to 26-30 MHz and are capable of accessing the Kiwi channels, our 40 channels, marine and all of the amateur bands.

They are all mode and are putting out around 30 watts.

Expect a new hand-held from Yaesu in the not-too-distant future with a heap of features.

This is another hot little item. A portable which is designed not just for the amateur market.

A scanner or two which will have a very good frequency range — the odd one or two have already hit the market in the last couple of months. There are also a few more CB models to appear shortly and, to top it off, yet another AM/FM/CB Radio Cassette is ear-marked for Australia.

The odd company or two, CB orientated ones, may also be dabbling in the next generation of car phones at more realistic prices. Computer software for scanner and shortwave listeners is in the making and more and more will be heard about FM.

CD/Video is about to become available in Australia with 3, 5, 8 and 12 inch video discs available at your local stores.

Quite a few decent items in store for this year by the looks of things and we all hope to be a part of it . . . at the right price of course.

★ ★ ★

A couple of letters about things from previous issues got me on the ball regarding the number of clubs still around the metro area and, believe it or not, from what I've been told there are only two, yes two, clubs that are still actually acting like a club.

The only one that I can recognise as a true club with outings and events is the Sydney Radio Club. This club, based on the North Shore, has to be the most genuine of all the clubs I have known about over the last few years. Others, such as the Lima Alpha CB Club must have taken a walk on the wild side as no matter how hard I try I still can't find a member on air or off.

Why is it that initially most clubs just set up as a call-sign only club.

In mid-January I spoke to a few operators who were members of clubs that seemed to have only a few members. The first thing I was told was that they didn't have meetings and, to top it off, most of them had never met each other.

This is not what a club is all about.

How in the hell do you expect any to be recognised by anyone.

If there are any genuine clubs left, drop me a line and I'll plug you till it hurts, but, keep in mind I expect to see proof. . . . PO Box 40 Gladesville NSW 2111, so start writing now. For that matter any genuine clubs anywhere, lets hear about you before you go off into the never-never.

★ ★ ★

Anyway that's it for this issue, take note of the address above and drop me a line . . . I'll answer anything.

Last couple of things, thanks to Troy for the info and details on his base gear . . . thanks to those who answered the request for the Alpha Tango group . .. and thanks to those who sent software for the Commodore System.

Keep up the good work and especially the letters.

Bye for now.

## INCREASE IN CB LICENCES

The DoTaC has released its annual report for 1987-88 and once again the figures for CB licences show an increase over the previous year. As of 30 June, 1988 there were a total of 263,880 licenced CBRS operators (up 16 per cent on the prior year) and our fees contributed almost $3.7 million to the kitty.

CBers represent 31.4 per cent of all licenced radio-communication users and provided 8.5 per cent of the 1987-88 licencing revenue.

In both the above terms, amateurs continue to be the poor relation with only 17,536 of them on the books generating only $491,000 for consolidated revenue.

So where does all this money go? Well, it helps to offset the cost of interference investigations, over 17,000 of which the Department dealt with over the 12-month period. 12,488 were of TVI, 2572 of BCI and 2458 were complaints of interference to radio-communications.

## SPECTRUM WALL CHARTS

If you do not want to take the chance of winning a superb RF Industries spectrum wall chart as one of the prizes in this issue's WORDMAZE, you can purchase one for yourself from RF Industries Sydney office by phoning (02) 519 5188 and ordering one at a cost of $10 including postage.

## 1989 WRTV ARRIVES

Dick Smith Electronics has advised that the '89 World Radio TV Handbook is now available in Australia and there is a review of this excellent publication elsewhere in this issue.

Through the kind resources of Dick Smith Electronics they have given Rob a copy to give away and this 'DXers Bible' will go to the best letter he receives by the end of April. He only has the one copy so go for it — Rob's address is c/o Box c111, Clarence Street, Sydney 2001.

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# 'BACK TO YOU...'

Letters from readers are welcomed. They should be type-written and present an interesting viewpoint.

## DEREGULATE CB ?

Dear Sir,

Regarding Jack Reynolds' letter in a recent issue of CBA.

His situation is one that I and many other operators on the 'citizen's band' would not envy — his frustration in paying for a licence fee and obtaining no service from DoTaC makes perhaps a worthwhile comparison with Telecom — all take and no give.

Maybe we should not pay for having a licence — abolish them as I believe has happened in America !

CB operators are most certainly targets for the authorities — the attempted banning by the previous NSW State Government of all CB in motor vehicles for instance.

Some of you may remember that the police were concerned that people were broadcasting the location of radar and other revenue earners and, in short, that CBers were partly responsible for the 'road toll'.

No wonder then that in recent months the police and DoTaC staff on the NSW central coast have been checking motor vehicles displaying CB antennas for licences and, I believe, that some people even had their rigs confiscated.

Other things also concern me.

What major incident could possibly happen by transmitting in the FM mode rather than AM or SST ? Surely, if the operator is not interfering with other services no problem exists.

So what if a few operators have some extra channels — is this harming anyone ?

Further, what crime against humanity is it to talk to overseas stations — or is someone (wrongly) concerned that they might lose telephone profits ?

By all means let swearing and deliberate jamming come to the attention of the authorities, but, why not simply do away with the restrictions governing DX and FM operation and let the authorities chase the real 'pirates' — the obscene and out-of-band operators?

Every CB I have ever owned has been licenced — I often wonder why ?

**Jeremy Pritchard**
**St Huberts, NSW**

## WE'RE ANNOYED

Dear Sir,

We at the Bunbury and District Repeater Group have been trying to get Greg Towells to update our Channel two repeater ownership since early 1988. Each time we pick up the current issue we still find you list ownership as Greyhound TV Services.

This is wrong.

It should read 'Sponsor: The Bunbury and District UHF Repeater Group'. I know Don Stewart has notified you more than once and others have done the same. It is a bit annoying to still find the current issue March/April still uncorrected.

How many times do we have to advise you?

I write this as a member of the group which now is over 100 strong so there are quite a few people becoming upset about this going on for so long.

Please follow this up and ensure the next issue is correct.

**G Stapley**
**Bunbury, WA**

*Hey, hang about for a minute. First off, this is the first time I have received anything whatsoever from your group or from Don and in answer to your rude "how many times do we have to advise you?" question the answer is once — providing that you actually do it.*

*I had a similar letter from the Margaret River group a couple of months back which even threatened action by a 'consumer organisation' if we didn't get it right.*

*Let's get everything into perspective here Mr/Miss/Ms Stapley — we provide the repeater listing as a service and it is updated on receipt of information.*

*If it isn't updated we didn't receive the information — simple as that....*

*What's with you Westralians — do you think the Eastcoasters are out to get you or something?*

***— Editor***

## SWR PROBLEM

Dear Sir,

Herewith a few lines of thanks for my free subscription for 1989.

My entry in the survey was at best somewhat half hearted, a bit like my entry into the CB owner/operator field. After buying a Pearce-Simpson Trucker and a five-amp Electrophone 24/12 volt reducer and bolting these two items together, it took about six weeks to decide that the package, with fuse holders hanging from it, was simply too bulky to have swinging from the coach's microphone arm at my right elbow.

The company I drive for does not provide CB radios in their vehicles.

So, it was back to the drawing board.

Bearing in mind the ever increasing prices, I thought I might buy a SSB set and after counting my pennies (cents?) many times and deciding that, what the heck, it is only money, I became the proud owner of a Cobra 148 GTL.

Being physically a little larger than the Trucker the 24/12 volt gadget was still a problem. Why could manufacturers not make a 24 volt version of their CB radios? It would only need a small power supply board, O-K? So I took my drill to the Electrophone product to see what lay under the cover and there it was, a nice little power board! After calculating the maximum wattage required by the Cobra and deciding that it would be required in only short bursts, the board now resides inside the Cobra's tin hide which also acts as the heatsink for the power transistors.

But, I still had to fix it inside the bus and the makers of these things are great non-conformists, they never make anything the same twice. Fortunately, they missed one thing — the windows to the driver's right are all flat.

And what do you do with a flat piece of glass? Well, you can stick a suction cup to it — or it's bigger brother — a 160mm diameter glass lifter.

So now the Cobra, with it's built-in voltage reducer, is carried by a (modified) glass lifter stuck to the window ahead — and above — of my eye level, but easy to see and reach. Listening to the set is via a slightly doctored Sony Walkman headphone.

And what do other drivers do?

Like I did, let it all swing from the microphone arm, or hang it from a window handle, or build wooden boxes for it which then sit on the floor beside them.

One driver even butchered a perfectly good Esky for this purpose! In all cases, should violent evasive action be required, their radios can all move around, while my set will not.

Still, I have one remaining problem, S.W.R.

Having read about this in CBA October 1984, July/August, September/October 1986, November/December 1988 and the ARRL Antenna Handbook, plus friends with CB experience, I have some idea on how to get it (SWR, that is) as low as it will go.

Antennae are mounted, in our case, on brackets which in turn are mounted

on either the windscreen stone guard or on the right hand rear vision mirror bracket.

So, I get SWR below 1.5: 1 on channel 1 and 40 when my antenna, a four foot Taipan, is fitted to a single decker. Transfer the whole shebang to a double decker and the SWR meter on the Cobra goes hard over on the wrong side of the scale. A re-designed mount relocates the antenna from 20cm to 50cm away from the coach and SWR comes down to 3:1. The adjustable tip on the Taipan will not bring this down any lower.

Here I must say that, in spite of the initial technical problems and the hassle of installing the CB set and antenna at the beginning of the shift and removing it all again at the end of the shift, I find it a great help keeping in touch, being part of the Roadshow instead of being peripheral to it.

In fact, I am now rather reluctant to move on the road without my CB gear and I also suspect I have missed out on a rather difficult to define better quality of life in all those years I had no CB gear.

CB Action Magazine takes on a whole new role now I am an active mobile CB-er and it is a very nice feeling that at least one of the finer things in life is coming for free for a whole year!

**Arie van Wageningen**
**Ceduna, S.A**

*The problem of high SWR when the antenna is used on a double decker coach is almost certainly one of coupling capacitance with the antenna reacting to the coach body. You either need to get it above the coach's roof line or further away from the body — neither sounds as though it's all that easy. There is further information about the problem in Lou Franklin's article in this issue.*

***— Editor***

## A MONITOR REPLIES

Dear Sir,

In your January/February issue of CB Action you published a letter by Mr Robert W Smith in 'The Back To You' section regarding monitors on the emergency frequencies. On this I would like to reply.

From what Mr Smith says it seems to me that he has neither been a monitor nor has had the need to require the services of one and I trust he never will on either account. I may be wrong, he may have sour grapes because a monitor was not there when he did call. If this is the case I am sorry but we are human and can't be on air 24 hours a day. That's why we need monitors.

He claims monitors are only glory seekers and resign when they don't get what they want, but a monitor seldom gets pats on the back, even when he is fundraising for the essentials needed to handle a call.

Every monitor hopes that he doesn't have a call whether he monitors for one hour or 12 hours a day. It can be horrific to get a call and keep calm, recording all details as well as keeping the caller calm when he is telling you that the baby's head is squashed, someone has had an arm cut off, or someone is pinned under the steering wheel and there is blood pouring out of his leg. You then have to call the appropriate emergency service and repeat the information received then go back to the caller and informing him that it will be a while before help will arrive because of the distance involved.

It isn't easy to keep frustration and concern out of your voice and stay calm in order to get updates on the condition of the victim or victims for the police to pass onto the service en route.

I wonder if Mr Robert Smith could do it ?

There are not many calls like this, but, each one could be.

We thank heaven that they are not.

If everyone felt like Mr Robert W Smith I wonder how we would cope ?

There would be no doctors, nurses, ambulances, police, special schools, hospitals, coastguards, flying doctors and unpaid services such as the SES, St Johns Life Line — and monitors like us!

A true monitor is proud to be doing this job for the benefit of his fellow man.

Now, I must thank you Mr Robert W Smith for the publicity you have given us — be it good or bad, you're still letting the public know that we are here.

**Dale Hoffman**
**New England Co-ordinator**
**NSW Public Relations Officer**
**ACRM**

*I think you have made your point.*
***— Editor.***

## WHERE'S THE MONITOR?

Dear Sir,

I'm a tow truck driver based in Melbourne and I'm in complete agreement with Bob Smith (letter in March/April issue) who states that 'monitors of emergency channels' are basically of no use.

We (the company I work for) used to try and raise these 'monitors' on both 27MHz and UHF 'emergency channels' and in 99 percent of cases we couldn't raise anyone anyway and, if we did, they mucked about for so long that it was a complete waste of time.

Candidly, we gave 'em away and went back to using our commercial UHF rigs and/or the public telephone. The monitors of CB emergency services are, in my opinion, just a pack of wankers.

**Rowan Kightly**
**Carlton, VIC**

*Your description of monitors in general is rather colorful, but, if that's how you feel . . .*

***— Editor***


# ARGENT FOR ICOM

*Throughout the world, discerning amateurs chose Icom.*

And across Sydney, they come to Argent. Because while technology strides ahead, one thing is never out of date.
Friendly service. From fellow amateurs who understand your needs. And an authorised repair centre where we know how keen you are to get back on air.
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**VHF/UHF**

**IC-32** Who else could pack 2m and 70cm, 40 memory channels, multiple scanning modes and cross-band full duplex into a 5w handheld? It had to be Icom.

**IC-R7000** More than just a scanner. . . the R7000 is a commercial-grade VHF/UHF monitor used by hundreds of government, professional and private bodies around Australia. 25MHz-2GHz, AM/FM/SSB, 99 memories, multiple scanning mode.

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# LOG BOOK

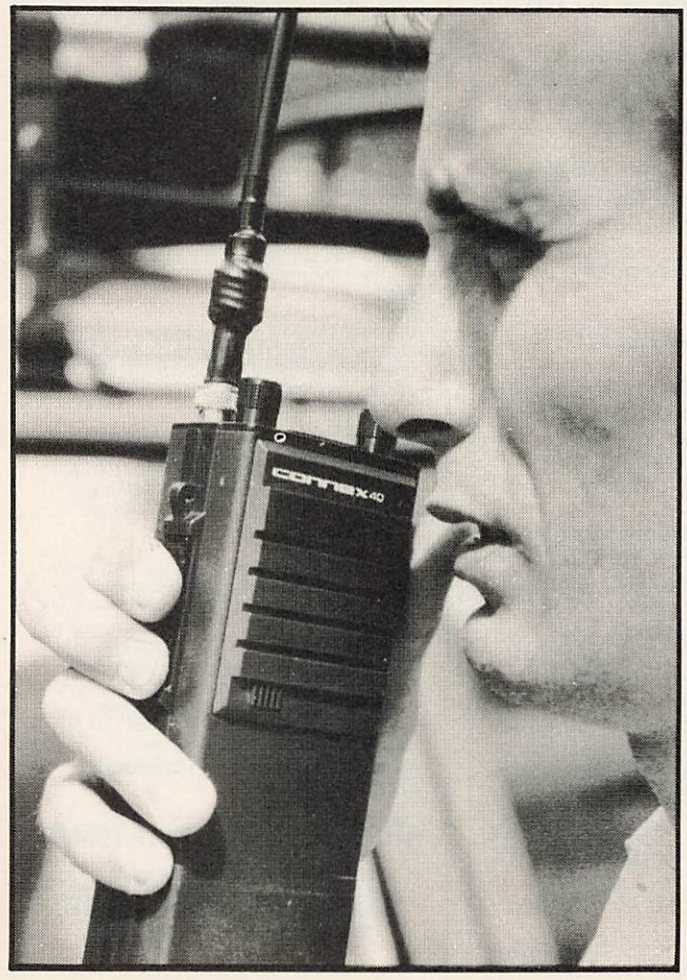
## CAPTAIN COMMUNICATIONS EXPANDS IN NSW

The news may be a little old (it was supposed to run in the last issue), but, it's still of interest to Sydney readers.

Captain Communications recently expanded their 'communications centre' in Parramatta with the addition of the adjacent premises at 26 Parkes Street. This addition means that 'The Captain' now provides over 20,000 square feet of showrooms, installation facilities and car parking making it arguably the largest such operation in Sydney and possibly Australia.

Services that will be enhanced by this expansion include sales, with full demonstration facilities for mobile, marine and cellular telephone communications, service and installation of everything sold by 'The Captain' and system support on the technical aspects of equipment.

This company also has released a miniature frequency monitor designed for displaying the frequency of both transmission and that of the receiver it is tuned to. It is ideal for users of both transceivers and receivers who require accurate digital frequency readouts. It is suitable for both HF and VHF operation with coverage from one kHz to 250MHz in two bands.




## NEW NAME TO INTRODUCE BOTH 27MHz AND UHF RIGS

A new name on the local market is worth noting, particularly when that name intends to release both 27MHz and UHF CB rigs. Rod Fewster is the first to advise anything on this and states that the Commex brand will release new rigs in the very near future. Pictured at left is one of the 40 channel UHF (and DoTaC approved) hand-helds which Rod states has first class workmanship.

Hopefully, we will bring you the first review on both the 27MHz and UHF rigs (there's also a mobile UHF rig) in the next issue.

### NEW PHILIPS UHF

There has been a very strong rumor around for some time now that Philips was shortly to release either a new or updated UHF rig, but, from what we hear this is not likely to happen this year. If we hear anything different you'll be the first to know.

### TAITRONICS

We're a bit lost here...this company advertised the 'Eavesdropper' SW antenna in our last issue and we also carried a review, but, it seems that the company has moved premises and we have received several calls asking where readers can purchase the antenna.

We don't know where the company is now located nor do we know of another SW antenna of similar quality performance — sorry.

### NEW COAXIAL SWITCH

Imark Pty Ltd now has available the Comet CSW-20M/N coaxial switches for use in radio-communications. Both units are manually operated, double contact units for switching RF (radio frequency) signals on a 50 ohm line.

The switches feature a wide frequency range, low VSWR, negligible insertion loss and high isolation between terminals. The CSW-20M is fitted with UHF type connectors and is usable up to 1000MHz while the CSW-20N is fitted with 'N' type connectors and is usable up to 1500MHz.

The units are supplied complete with feet and screws for either benchtop or wall mounting.

# DATELINE: NEW ZEALAND

**In the first of an occasional series, David Flynn reports on the CB scene around the globe. Here he describes how CB in New Zealand finally entered the 80's.**

I first heard about NZ CB when a friend visited the isles in 1977. CB was in full-swing in Sydney, and he found the same of New Zealand, albeit on a smaller scale.

But the Kiwis were doing it without our newly-legalised trauma. They didn't have the hassles of sideband vs AM, didn't have to contend with a shift from 23 channels to 18 or with rigs dumped on our shores when the US bubble burst.

New Zealand CB, he said, was "a series of unexpected surprises and contrasts", and he neatly labelled it as "the Cinderella service". Translation: what looks dreary turns out to be rather attractive.

More than 10 years later, I'm pleased to report that Cinders is still at the ball, and kicking her heels up in fine style.

Consider this little-known fact . . . New Zealand's CBRS commenced in 1953, and so it is the world's first CB service (America's began in 1954).

And up until last year, the Kiwi CBer had to make do with 11 channels, AM only (limited to two watts), and heavy restrictions on aerials.

They've not been blessed with 40 channels, 4w AM and 12W SSB and approval for beams, quads, and any other directional antenna they desire.

That's pretty nifty for a country with barely 30,000 CBers on the books. I mean, we've got more than that here in Sydney.

So just how has the NZ CBRS gone from zero to hero?

### SMALL BEGINNINGS

The original 1953 allocation provided for seven channels, spaced at 25 kHz from 26.425-26.575 MHz. AM was the only mode allowed, with an output of half a watt.

These regulations were still in place when the CB 'boom' of the mid-70s arrived. It had the same effect in New Zealand as in Australia and other countries, with one exception. In NZ it flourished in a legal and controlled environment. Enthusiasts did not have to go outside the law to indulge in this exciting new past-time, athough piracy on 27MHz was by no means unknown.

This rapid growth resulted in a call for the allocation of extra channels, led by the newly-formed CB Radio Association of New Zealand (CBRANZ).

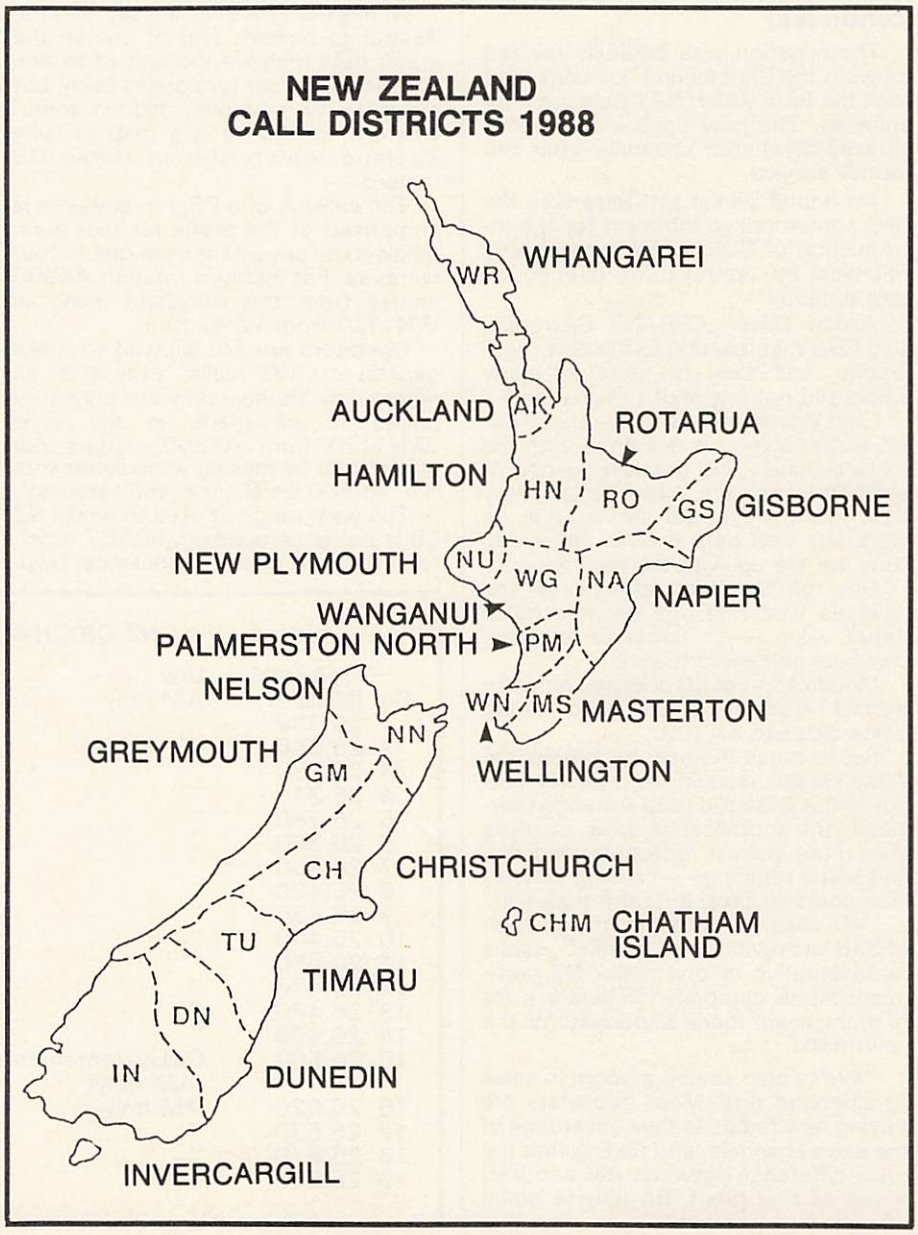
1976 saw an expansion to 11 channels, through to 26.675MHz. A further three channels above this were also created, being set aside for use by business and marine use, government bodies and Civil Defence. The power limit for AM was increased to two watts.

CB radio eventually reached its peak in 1980, with an estimated 45,000 operators. Then followed a mass exodus from the band, once again mirroring trends throughout the world. Advances in radio-communications also played a part in this, with many NZ CB business-users going across to their own systems and maritime operators moving onto the VHF marine band.

The New Zealand CB scene has stabilised at around 30,000 users for the past few years.

In June 1987 the Radio Frequency Service (RFS - NZ equivalent to DoTaC) released its first proposal for a 40 channel service. This was built around the exiting 26MHz band, but adopted 10kHz channel spacing. This initial plan was modified after it was discovered that one of the new frequencies was used by Christchurch University for propogation experiments — with a 1kW transmitter.

**(continued over)**



**Another home-grown CB was the PLL-driven Airlane Mk V.**

# DATELINE: NEW ZEALAND

**(continued)**

The alloction was carefully revised to avoid the Christchurch kilowatt, and took the form which NZ CBers are now enjoying. The new band incorporates all even-numbered channels from the former service.

An added bonus to CBers was the RFS agreement to lobbying for the introduction of SSB, which was shortly followed by approval of directional-gain antenna.

Arthur Driver, CBRANZ Secretary, told CBA that reaction to the new regulations was slow to start as many CBers did not know of the changes.

"But word spreads fairly rapidly on-air, and everyone is delighted with the extra channels and the introduction of sideband," he said. "New Zealand may have had the first CB service but we were left well behind over the years. Now we are up with the field again."

One of the first effects of the changes was that rigs became much better value — in terms of features, channels and performance.

Modification of 40 channel radios to the old 14 channel/2 watt specification costs close to $A100.

But because the new band uses the same channel spacing and power output as the Australian and American services, the modification now involves little more than a reprogrammed PLL and some retuning — causing conversion costs to drop by more than half.

"40 channels and the introduction of SSB has revitalised CB radio", said a representative of one major NZ communications company. "There's a lot of enthusiasm there, especially for the new mode.

"We're also seeing a boom in sales of sideband rigs. Most hobbyists are buying new radios to take advantage of the extra channels, and finding that the price difference between AM and SSB is not all that great. So they're going straight into sideband."

## ON AIR IN NZ

For CB purposes, New Zealand is divided into 18 districts.

At this point, we writers say 'see the illustration below', and of course the editor puts it above the text or to one side or in a corner two pages away, but never 'below'! Anyway, hidden somewhere in this issue is a map of New Zealand which shows these CB regions.

The callsign of a CBer in any area is comprised of the prefix for that area, followed by anywhere from one to four numbers. For instance, station AK500 comes from the Auckland area, an WN1120 from Wellington.

Operators are not allowed to make general or 'CQ' calls, except in an emergency. Rather, calls are only supposed to be made in the style 'WN1120 from AK500'. CBers get around this by making announcements like 'AK500 on channel and listening'.

The wide range of uses to which NZ CB is put is astounding. REACT monitoring teams, police, ambulance, businesses, Civil Defence, fire brigades and car clubs share a peaceful co-existence with hobbyists.

At present, ch15 (26.700 MHz) AM is the sole calling channel, in addition to being the recognised emergency frequency. Most boat clubs use ch19, and ch11 has been adopted as a truckies' channel.

There is no sideband call channel as yet, although the RFS and CBRANZ will undoubtedly nominate one as the mode grows in popularity. (Sources indicate that 40LSB could be the eventual choice.)

CBers who have SSB facility therefore still call on 15AM, and then QSY to a chosen sideband channel (26-40).

Most of the Australian rigs are now appearing across the Tasman. Uniden, Electrophone, Pearce-Simpson and Cobra have all appointed NZ agencies. At least one radio — Electrophone's TX830N — provides an 'instant 15' button which resets the rig to the NZ calling/emergency channel.

Until recently, most rigs were manufactured in New Zealand. Foremost amongst these was Tait, whose CB4 was the country's most popular CB radio, and was designed to be used in portable, mobile or base capacity.

An immediate effect of the new regulations is that CB rigs are not only less expensive, but far better value for money.

For instance - many rigs came with only the call channel fitted, with a full 12 channel CB costing $A350.

For the same amount, the NZ CBer can now buy a 4w 40 channel SSB mobile, while AM-only prices start at $A200.

There are about two dozen CB clubs in New Zealand, with memberships

## NZ CB CHANNEL GUIDE

| Ch. | Frequency (MHz) | Use |
|---|---|---|
| 1 | 26.330 | AM only |
| 2 | 26.340 | " |
| 3 | 26.350 | " |
| 4 | 26.370 | " |
| 5 | 26.380 | " |
| 6 | 26.390 | " |
| 7 | 26.400 | " |
| 8 | 26.420 | " |
| 9 | 26.430 | " |
| 10 | 26.440 | " |
| 11 | 26.450 | " |
| 12 | 26.470 | " |
| 13 | 26.480 | " |
| 14 | 26.490 | " |
| 15 | 26.500 | Calling/emergency (AM only) |
| 16 | 26.520 | AM only |
| 17 | 26.530 | " |
| 18 | 26.540 | " |
| 19 | 26.550 | " |
| 20 | 26.570 | " |
| 21 | 26.580 | " |
| 22 | 26.590 | " |
| 23 | 26.620 | " |
| 24 | 26.600 | " |
| 25 | 26.610 | " |
| 26 | 26.630 | "SSB only |
| 27 | 26.640 | " |
| 28 | 26.650 | " |
| 29 | 26.660 | " |
| 30 | 26.670 | " |
| 31 | 26.680 | " |
| 32 | 26.690 | " |
| 33 | 26.700 | " |
| 34 | 26.710 | " |
| 35 | 26.720 | " |
| 36 | 26.730 | " |
| 37 | 26.740 | " |
| 38 | 26.750 | " |
| 39 | 26.760 | " |
| 40 | 26.770 | " |

ranging from 100 down to social groups with less than 10 on the books. The majority of groups are affiliated with the CBRANZ.

Formed in 1974, the CBRANZ is recognised by the FRS and other government departments as the national representative body for the CBRS. It maintains a good working relationship with the RFS, and is credited by most CBers and the industry with being responsible for numerous improvements in the CB service, including the recent adoption of 40 channels and SSB.

Also to the Association's credit is its production of the callbook. This 50-page booklet lists the callsign, name and address of most NZ CBers, along with club addresses and extracts of the CB regulations.

CB NZ-style hasn't lost that ability to surprise you, as much with the friendliness of its operators as with the rapid development of the service itself.

'The Cinderella service'? You've come a long way, baby!

## SO HOW DOES THE AUSTRALIAN CBer TALK TO A KIWI?

*"Meet us out of band — or use the telephone!" CBA was firmly told by Jim, an NZ CBer of long standing.*

*"New Zealand CBers have no desire to see our channels hit by overseas skip. That's one reason why we're happy with 26 megs. Because we avoid the congestion and interference from across the pond, the US and everyone else on 11 metres."*

*"We've never expected to get 27MHz. Our TV channel 2 is on 54MHz — 11 metres would demolish TV reception."*

*"But if we want to work DX, we go outside the band. Believe me, piracy is very much alive in New Zealand. So the message is don't call us, we'll call you — on 16 or 35 lower, above 40 or between your band and ours. But ask the Aussie CBers to please keep clear of 26.770 and below."*

*It isn't surprising that there is no great amount of pressure for a UHF CB service in New Zealand.*

*Think about the high price of 26MHz radios — even a basic UHF rig would retail for over $A500, under the current import duties and sales tax.*

*And the NZ CBers are understandably thrilled to have been given almost a four-fold increase in channels, a doubling of output power, use of sideband and approval of directional antennae. Why ask for more?*

*Interestingly enough, the original NZ regulations provided for a UHF CB band at 465MHz, but no radios were ever built or type-approved for this service — and so no licences were ever issued.*

*Early CB licences were endorsed to allow operations on both 26MHz and 465MHz, although reference to the UHF band has since been removed from licences.*

*Philips did make efforts to establish our UHF service in New Zealand, but met without success. But could the time be ripe for another attempt?*

*Under the newly-signed Closer Economic Relations (CER) agreement, trade barriers between Australia and New Zealand are being progressively removed.*

*Import duty on CB radios, formerly at 45%, has since been reduced to 25% — and will continue to fall in stages until June 1990 when it is removed altogether.*

*At the present exchange rate, this would see the price of a basic UHF mobile drop to around $A400, placing it in the same bracket as a mid-range sideband radio.*

*As 'free-import' status will apply only to goods manufactured in either country, this would put Philips and GME-Electrophone ahead of the competition - who, like companies importing 26MHz rigs from the Orient, will still be liable for a small duty.*

*Can the NZ CB fraternity support a UHF service? Certainly not a stand-alone alloction such as 465MHz. But a 477MHz CBRS would simply extend the Australian market into a Pacific one, without any additional costs for modifications.*

*And who was prepared on the support which business-users showed for the Australian UHF service? If this was reflected in New Zealand — and there is no reason why the commercial and rural sectors would not take to UHF CB - then it is not difficult to foresee a 477MHz service in NZ, complete with a repeater in each major city.*

*The RFS has not committed itself either way on this possibility, and says only that, "the matter is still under consideration".*

*We may yet see the NZ CBers returned to UHF!*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The Stylish, compact (just 130 × 140 × 30mm) Dick Smith Electronics AM CB with pushbutton, electronic tuning. Exceptional value and reliability make it a popular choice. Take a look at the features . . .

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- Maximum legal power
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- All 40 AM channels
- Complete with mic and mounting hardware

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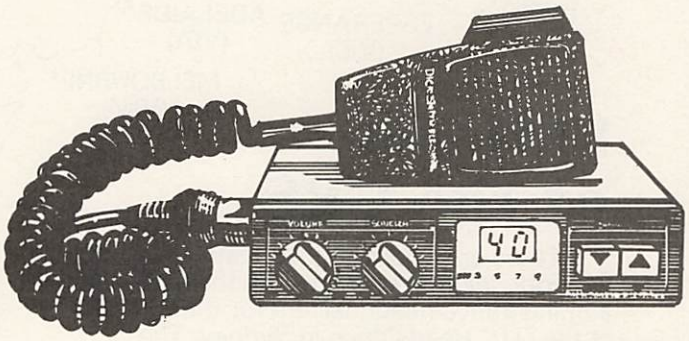

DICK SMITH ELECTRONICS

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# COASTAL WATCH—SHORTWAVE

**Picking up from where Russell Bryant finished off, ROB WILLIAMS writes about listening to OTC coastal radio stations on shortwave . . .**

Australia is a large continent totally surrounded by water and a large percentage of our population has the advantage of using our coastal waters.

With this thirst for the ocean, pleasure craft, yachts and ships travel through Australian waters in ever increasing numbers.

To reduce the chance of loss of life the Overseas Telecommunications Commission (OTC) is entrusted with the monitoring and operating of our coastal radio stations (CRS).

Russell Bryant, back in March/April 1988, wrote about our CRS on VHF. In this article I intend to concentrate on the CRS operations on HF radio.

First of all, let's take a look at the stations OTC uses. OTS has 15 CRS situated around Australia on the mainland and neighboring islands. The callsigns and locations are:

VII — Thursday Island; VIT — Townsville; VIR — Rockhampton; VIB — Brisbane; VJU — Norfolk Island; VIS — Sydney; VIM — Melbourne; VIH — Hobart; VIA — Adelaide; VIE — Esperance; VIP — Perth; VIC — Carnarvon; VIO — Broome; VID — Darwin; VIN — Geraldton.

### VIS — Sydney

Sydney's CRS has its own control centre at La Perouse, a few kms south of Sydney Harbor.

The transmitters and receivers are not located at La Perouse. The VHF transmitters are located on a watertower at South Head, at the entrance to Sydney Harbor. The HF transmitters are located at Doonside in the western suburbs, on a large piece of real estate where numerous HF antennas are located.

The receiving station for HF communications is located at Bringelly, a few kms south-west of Doonside, adjacent to the RAAF HF receiving station and close to the new airport proposed for Sydney.

Landlines interconnect the three sites to La Perouse where a communications officer can control their use.

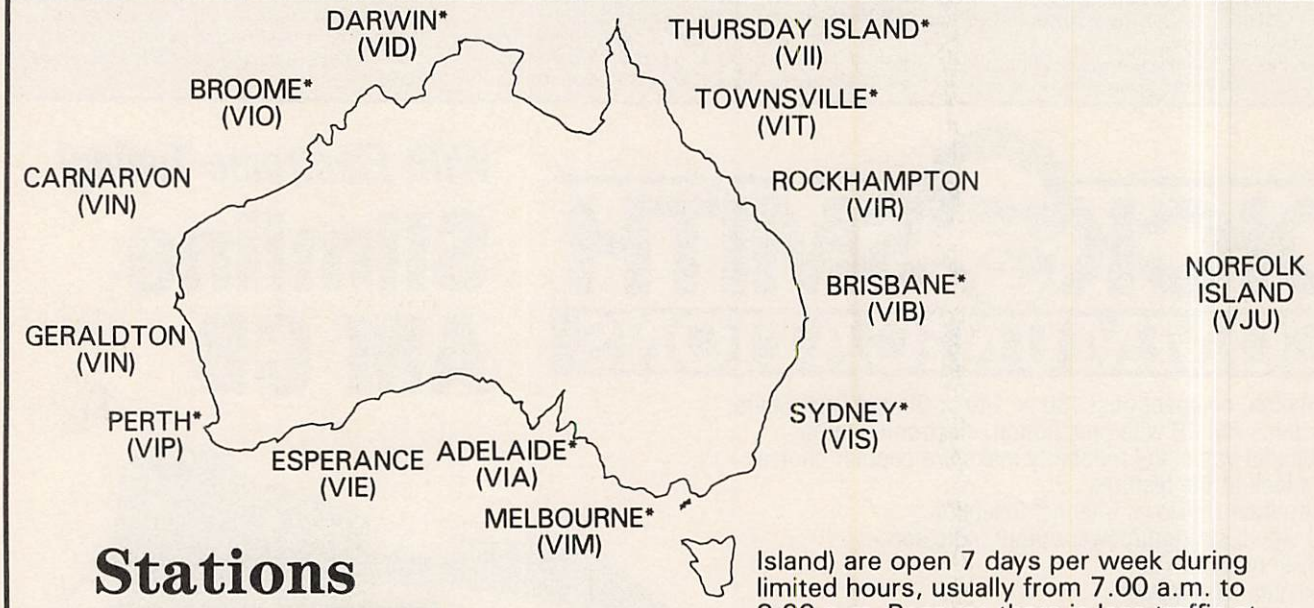
Sydney and Perth are main HF stations for the transmission of Seatex, which is a telex over radio service. Here duplex (transmission from shore to ship and another from ship to shore) is used to relay telex information. Sydney has seven frequencies and Perth six for this service.

There are six main functions a CRS provides:

1) Communications for search and rescue operations through co-ordination with the sea safety centre in Canberra.
2) A weather bulletin service for coastal ships and high-sea vessels.
3) Navigational warnings through notice-to-mariners bulletins.
4) A 24-hour listening watch for safety of life at sea (SOLAS).
5) A radio telegram service for ships.
6) A HF (Radphone) and VHF (seaphone) radio-telephone service.

Functions one to four are community-funded services while the last two are OTC revenue-earning functions.

Through a CRS, a telephone call can




## Stations of the CRS

There are at present 15 stations in the network, located as shown on the map. The administrative headquarters for the CRS is at the OTC Head Office in Sydney. The Sydney coast radio staion, which is located at La Perouse, nine miles south of the city and overlooking Botany Bay, is the principal station in the network.

*These 9 main stations are open continuously, providing a 24-hour service to shipping. The other stations (except Norfolk Island) are open 7 days per week during limited hours, usually from 7.00 a.m. to 8.00 p.m. Because there is less traffic at night, and the range of radio reception is generally improved during the hours of darkness, the continuous-watch stations are considered adequate to provide full coast coverage during the night.

‡The Norfolk Island station provides radiotelephone communication on the frequencies used for communication with small ships, but only by prior arrangement. The station also has an automatic alarm receiver which keeps a guard watch on the international radiotelephone distress frequency (2182 kHz).

be placed to any destination in the world.

Our table lists the Radphone frequencies that each of the CRS use for telephone traffic.

When a ship wishes to establish communications with a CRS it calls it on either 2182, 4125, 6215.5 Khz or VHF ch 16.

### Weather Forecasts

CRS provide two types of weather forecasts. The first is for coastal waters around the reception area, while the other is for ships on the high seas.

### Coastal Weather Forecasts

Two HF frequencies are used to broadcast weather details on 2201 and 4428.7 Khz. Broadcasts are given at the following local standard times:

VIA-0633,1833;
VIB-0633,0833,1233,1833;
VIO-0833,1833;
VIC-0718,1318,1718;
VID-0903,1303,1703;
VIE-0748,1148,1748;
VIH-0818,1218,1703;
VIM-0133,0733,1333,1733;
VIP-0803,1203,1803;
VIR-0848,1248,1648;
VIS-0348,0548,0748,1148,1748;
VII-0703,1303,1703;
VIT-0603,0803,1403,1603,1803.

At other times (usually at two-hour intervals) traffic lists for ships which have calls waiting for them are broadcast.

**SEATEX FREQUENCIES PERTH**

| | STATION FREQ. kHz | SHIP FREQ. kHz | REMARKS |
|---|---|---|---|
| **PERTH RADIO VIP SELCAL** | | | |
| 0331 or 005030331 | | | |
| VIP 31 | 4352.5 | 4173 | Continuous |
| VIP 33 | 8707.5 | 8346.5 | Continuous |
| VIP 40 | 13076 | 12496 | Continuous |
| VIP 35 | 17200 | 16663 | 2200–1000 UTC daily |
| VIP 32 | 6497 | 6259 | 1000–2200 UTC daily |
| VIP 36 | 22564 | 22195 | On request |

**SEATEX FREQUENCIES SYDNEY**

| | STATION FREQ. kHz | SHIP FREQ. kHz | REMARKS |
|---|---|---|---|
| **SYDNEY RADIO VIS SELCAL** | | | |
| 0330 or 005030330 | | | |
| VIS 61 | 4356.5 | 4177 | Continuous |
| VIS 65 | 8711.5 | 8350.5 | Continuous |
| VIS 67 | 13078 | 12498 | Continuous |
| VIS 69 | 17204 | 16667 | 2100–1100 UTC daily |
| VIS 63 | 6501 | 6263 | 1100–2100 UTC daily |
| VIS 84 | 8710.5 | 8349.5 | On request |
| VIS 71 | 22568 | 22199 | On request |


DID YOU KNOW THERE'S LIFE AFTER

CB RADIO?

Our sister publication

AMATEUR RADIO ACTION

is on sale every month with news, reviews and general articles on amateur radio and it's a good read!

# CB ACTION/MOBILE ONE/RF INDUSTRIES WORDMAZE

This issue's Wordmaze has as its prize eight Super Spring Skip whips courtesy of Australia's biggest antenna manufacturer Mobile One. In addition, there are also eight Spectrum wall charts courtesy of Sydney based RF Industries.

There will be a winner from each state so go for it.

1. Who (surname) wrote the article on shortwave receivers in this issue?
2. Who (surname) wrote the Dateline New Zealand article?
3. What is the first name of the company (mentioned in editorial) that produces QSL cards?
4. What is the make of the UHF handheld reviewed in this issue?
5. What is the surname of the contributor who wrote the piece, "Is there life after CB" in the March/April issue of CBA?
6. What is the first name of the company which was recently granted an American patent?
7. What are the three initials of the OTC CRS station in Norfolk Island?
8. If you heard a New Zealand callsign AK500, what area would the station be located in . . .?
9. In this issue there is a paragraph tht reads, "And what do other drivers do?", in what town/city does the author live?
10. What company manufactures the R700 scanner ?

M U Q N S H R H E B V E V J
H C B V P E U X E Y D Y I T
I J E C J J O E P T O C U I
N I F E V G T A B E E N P X
Y G A X R N J N E C W E J V
L U S O I G Y U P E U G P N
W I T B Q K K D J U E E Q O
E S C V V U H E E J Y R P E
N I I O S Y E C D U O X X E
W W K J M B E O O M U D Z O
F L Y N N M K O P Q C Q D U
S P E L C B M O O W I T U G
O R O W E E O I O H Q Y I H
X O I I C I F O G H N O V C

**ANSWERS:**

1.....
2.....
3.....
4.....
5.....
6.....
7.....
8.....
9.....
10.....

*NOTE: The correct answers MUST be circled in the Wordmaze as well as listed above.*

LAST ISSUE WINNER was Mr D. Brogan, Adamstown Heights, NSW — our congratulations Mr Brogan, the great Uniden 540e transceiver will be on its way to you shortly courtesy of Santronic Agencies.

The correct answers were 1 — Williams, 2 — Belcone, 3 — Santronic, 4 — ICOM, 5 — Philips, 6 — Eavesdropper, 7 — Taitronics, 8 — Stewart, 9 — FM, 10 — Toukley.

*The answers can run in any direction — horizontally, vertically, diagonally — and also back to front. Find the ten words hidden in the maze, mark them on the Wordmaze and also list them, and post your entry to:*

*CB Action/Mobile One Wordmaze*
*GPO Box 628E*
*Melbourne Vic 3001.*

*The closing date is May 24 and the winner will be selected from all the correct entries received by that date. The draw will be conducted in the offices of CB Action and the results and solution will be published in the next issue.*

*The judges decision is final and no correspondence will be entered into.*

*Photostat copies of the entry form are acceptable.*

DATE APRIL 1989 ADDRESS NO. 8303

SYDNEY-JAPAN 7825
27.0 MMMMMMMMMMFFF%%%.. MMMM
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-MIDDLE EAST 12903
27.0 .FFFFFFFFF% .. ..
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-CENTRAL EUROPE 16090
27.0 ...%%%%%.....
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-SOUTH AFRICA 11036
27.0 .MMMMMF%.
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-C&E.COAST USA 15712
27.0 %%. ... %%%%
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-WEST COAST USA 11951
27.0 MMMMMMMF%%%. .....MMMMM
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-WEST INDIES 14950
27.0 FFFFFF%%.. FFFFF
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-SOUTH AMERICA 13180
27.0 FFFFFFFF% .%FF
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-NORTH AFRICA 17109
27.0 .. %FFFF%% ...
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-PAPUA NEW GUINEA 2740
27.0 FFFFFFFFF%.. .. %FFF
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-ENGLAND SR 16993
27.0 ...%%%.....
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-WEST AFRICA SR 16428
27.0 %%F%. %F%. .%%
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-ENGLAND LR 23031
27.0 .. .%.
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-WEST AFRICA LR 23596
27.0 FFF%%...F%%..... %FFFF
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-JAPAN 7923
27.0 MMMMMMMMMMMMFFF%%%. MM
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-MIDDLE EAST 10077
27.0 .FMMMMMMMMMF.....
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-CENTRAL EUROPE 13575
27.0 ..%%%%%%%....
MHZ ! ! ! ! !
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PERTH-SOUTH AFRICA 8315
27.0 MMMMMM%.
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-C&E.COAST USA 18614
27.0 %%. ... .%%
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-WEST COAST USA 14743
27.0 FFFFFF... .FF
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-WEST INDIES 18005
27.0 %%FFFF%%. %%
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-SOUTH AMERICA 14569
27.0 .%%%%%%. %. .
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-NORTH AFRICA 13941
27.0 ... %FFFFFFF%.. .
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-PAPUA NEW GUINEA 4073
27.0 FFFFFFFFF% .F
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-NEW ZEALAND 5255
27.0 %MMMMF%%. %%
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-ENGLAND SR 14480
27.0 ...%%%%%....
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-WEST AFRICA SR 13804
27.0 F%%. FFFFFF.
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-ENGLAND LR 25544
27.0 ....
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-WEST AFRICA LR 26220
27.0 %FFF%. %FF%... %%%
MHZ ! ! ! ! !
00 06 12 18 24

MELBOURNE-P.N.G. 3157
27.0 MMMMFFFFFF%..... %FMM
MHZ ! ! ! ! !
00 06 12 18 24

BRISBANE-P.N.G. 2090
27.0 FFFFFFFFF. .FFF
MHZ ! ! ! ! !
00 06 12 18 24

HOBART-PAPUA NEW GUINEA 3711
27.0 MMMMMMMMMF%..... %FMM
MHZ ! ! ! ! !
00 06 12 18 24

ADELAIDE-P.N.G. 2960
27.0 MMFFFFFFFF%..... FFM
MHZ ! ! ! ! !
00 06 12 18 24

BRISBANE-NEW ZEALAND 2506
27.0 FFFFFFFF. FFFF
MHZ ! ! ! ! !
00 06 12 18 24

ADELAIDE-NEW ZEALAND 3214
27.0 MFFFFFFF%%. %%%M
MHZ ! ! ! ! !
00 06 12 18 24

DARWIN-NEW ZEALAND 5321
27.0 MMMMMMMF%.. FMM
MHZ ! ! ! ! !
00 06 12 18 24

These GRAFEX style predictions present in pictorial form the expected HF propagation conditions between Australia and a number of important DX areas. For each circuit, the "East" terminal refers to the eastern half of Australia. The horizontal axis of each graph represents the hours of the day in Greenwich Mean Time from 0000 hours to 2300, reading left to right. The vertical axis represents increasing frequency.

A GRAFEX symbol represents the predicted propagation conditions for a particular frequency at a particular time. The meaning of each symbol used is given in the key on the next page. The letter "F" designates the best conditions for HF communications.

**Grafex prediction charts supplied courtesy of the Ionospheric Prediction Service, 162-166 Goulburn Street, Darlinghurst, NSW.IPS offers pre-recorded telephone information. To access the service, please phone (02) 269 8614.**

**LEGEND TO GRAFEX SYMBOLS**

- Propagation is possible but probably on less than 50% of the days of the month.
- % Propagation is possible on between 50% and 90% of the days of the month.
- 'F' Propagation is possible by the First F modes on at least 90% of the days of the month.
- 'E' Propagation is possible by the E modes on at least 90% of the days of the month.
- 'M' Propagation is possible by both the First and Second F modes on 90% of the days of the month.
- 'S' Propagation is possible by the Second F mode on 90% of the days of the month.
- 'A' High absorption — above the ALF but probably too close to it for good HF communication.
- 'X' Complex mixture of modes including the Second E mode.

NOTE: Skip conditions are virtually the same from Sydney as they are for all other East Coast areas — likewise Perth predictions can be taken as similar to those for other West Coast areas.

DATE MAY 1989 ADDRESS NO. 8303

SYDNEY-JAPAN 7825
27.0 MMMMMMMMMFFX%%... MMMM
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-MIDDLE EAST 12903
27.0 %%F%FFFFF. ..
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-CENTRAL EUROPE 16090
27.0 ....%%%
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-SOUTH AFRICA 11036
27.0 MMMMM%
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-C&E.COAST USA 15712
27.0 ... .....
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-WEST COAST USA 11951
27.0 MMMMMF%%%%.. . %MMMM
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-WEST INDIES 14950
27.0 F%%%%%% .FFFF
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-SOUTH AMERICA 13180
27.0 FFFFFF%% %FFF
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-NORTH AFRICA 17109
27.0 ... .%%%F. .%.
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-PAPUA NEW GUINEA 2740
27.0 FFFFFFFF%. %FFF
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-ENGLAND SR 16993
27.0 .....
MHZ ! ! ! ! !
00 06 12 18 24

SYDNEY-WEST AFRICA SR 16428
27.0 FF4. %F% FF
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00 06 12 18 24

SYDNEY-ENGLAND LR 23031
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SYDNEY-WEST AFRICA LR 23596
27.0 %%... .%%... .F%%%
MHZ ! ! ! ! !
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PERTH-JAPAN 7923
27.0 %MMMMMMMMMMF%%... .%%
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00 06 12 18 24

PERTH-MIDDLE EAST 10077
27.0 ..MMMMMMMMF. .
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-CENTRAL EUROPE 13575
27.0 ...%%%%%.
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-SOUTH AFRICA 8315
27.0 FMMMMF.
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-C&E.COAST USA 18614
27.0 .. ..
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-WEST COAST USA 14743
27.0 %%%%. .%%
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-WEST INDIES 18005
27.0 F%%%%%%.. .F
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-SOUTH AMERICA 14569
27.0 .FFF%%.. .
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-NORTH AFRICA 13941
27.0 ... .%%%%FF% .
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-PAPUA NEW GUINEA 4073
27.0 FFFFFFFFF% .F
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-NEW ZEALAND 5255
27.0 FMMMMFF%. %F
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-ENGLAND SR 14480
27.0 ....%%%%.
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-WEST AFRICA SR 13804
27.0 F% FFFFF4
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-ENGLAND LR 25544
27.0 ...
MHZ ! ! ! ! !
00 06 12 18 24

PERTH-WEST AFRICA LR 26220
27.0 .... %F% ...
MHZ ! ! ! ! !
00 06 12 18 24

MELBOURNE-P.N.G. 3157
27.0 MMFFFFFFF%. .FFM
MHZ ! ! ! ! !
00 06 12 18 24

BRISBANE-P.N.G. 2090
27.0 FFFF%%%%. .FFF
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00 06 12 18 24

HOBART-PAPUA NEW GUINEA 3711
27.0 MMMMMMMF% .FMM
MHZ ! ! ! ! !
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ADELAIDE-P.N.G. 2960
27.0 MFFFFFFFF%. FFM
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BRISBANE-NEW ZEALAND 2506
27.0 FFFFFF%. %FFF
MHZ ! ! ! ! !
00 06 12 18 24

ADELAIDE-NEW ZEALAND 3214
27.0 MMFFFFFF% .FFM
MHZ ! ! ! ! !
00 06 12 18 24

DARWIN-NEW ZEALAND 5321
27.0 MMMMMF% FMM
MHZ ! ! ! ! !
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# DX INTERNATIONAL

**Compiled by Jack, 67-W-07**

**After a relatively unstable and erratic start earlier in the year, the 11-metre band has picked up quite considerably in recent weeks. Avid DXers have been treated to some excellent longpath openings, some lasting up to six hours. Although some solar disturbances have knocked the band around, the conditions overall have been exceptionally good with signals holding well in most cases.**

There have been reports of some "slims" operating about the land. Experienced DXers and old timers will know that slim is a radio term referring to a bogus DX station. Usually a slim says that he is operating from some rare DX country when in actual fact he is not there at all. There has been one particular slim operating out of Italy who has been quite active and has been giving Bulgaria and Romania as his locations. He is well known in Europe but unfortunately many people have fallen for his gimmick and will now be waiting for cards that will never materialise.

Closer to home, there is another slim operating out of East Timor but often claim that he is in Burma or Vietnam, both rare countries for DXers. A couple of well known Indonesian DXers have blown his cover so he has been on the quiet side lately, most likely waiting for the heat to blow over so to speak.

Many DXers often wonder why they have difficulty in receiving QSL cards from some countries, usually the rarer countries that have the least amount of active operators. Some of the blame in this situation falls back on the DXer. By placing the station's callsign on the envelope you've probably killed your chances of the card ever reaching the operator in the first place. Many overseas countries have very strict regulations governing the ownership of radios capable of any form of transmission by private citizens. Amateur radio in these countries is still not totally accepted and is subjected to many harsh regulatory conditions regarding its operation.

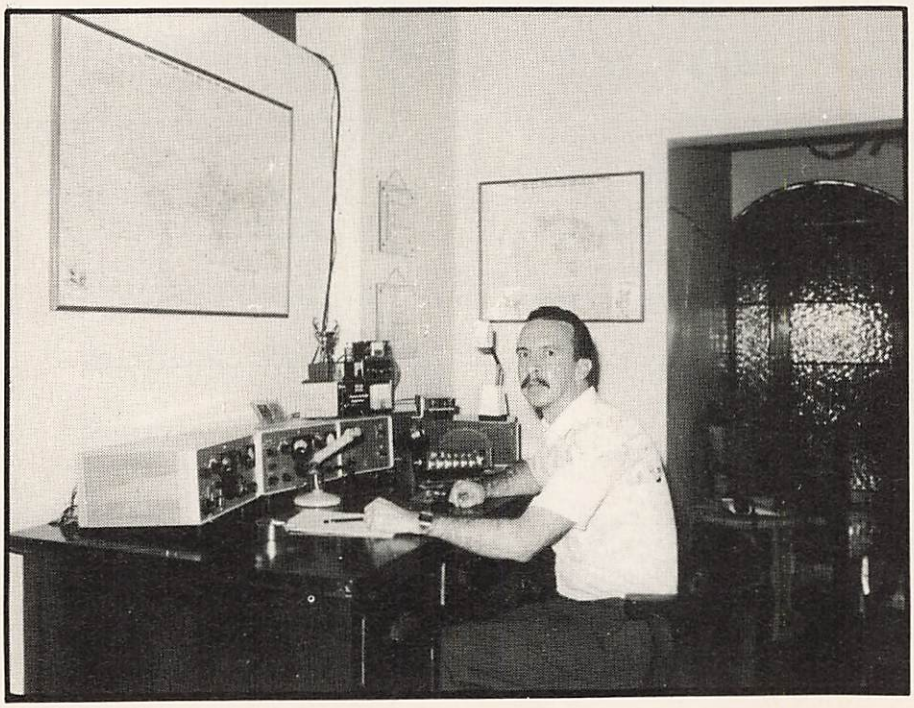
The following is a list I have compiled of countries where operators do not want their callsign displayed anywhere on the exterior of the envelope: Angola, Aruba DW1, Austria, Belize, Belgium, Burma, Botswana, East Germany, El Salvador, Finland, Mozambique, Namibia SWA, Nicaragua, North Korea, Romania, Singapore, Switzerland, West Germany, and the USSR. No doubt there are others I have failed to mention but I will update the list in a future edition of this column.

## AFRICA & INDIAN OCEAN REGIONS

This area has been a little slow in joining the improving conditions.There has been, however, the odd signal from Madagascar making an appearance on the band by way of Pierre, who signs as MI-2299. He has been heard around 0630z onwards with a reasonable signal.

Reunion Island and Mauritius have been around as usual and if your French is up-to-date you will have no trouble getting these. Most of the regular stations have been heard from around 0530z onwards, although signals are not very stable, but no doubt will improve as the band picks up. Activity from the island of Mayotte has been scarce but I did hear a weak signal at 0755z from189-AB-003. This station was quickly pounced on by stations in Europe and was soon lost in the noise.

Many DXers still are experiencing problems with QSL cards out of Reunion, Mauritius and Mayotte Islands so be cautious with this area if you still need it.



**RADIO CALI 56, operated by Eddie out of Colombia in South America, Eddie uses Collins "S" line radios for SWLing and a Cobra 148 GTL for the CB bands.**

South Africa and neighboring countries have been down in signal but are gradually starting to pick up here on the east coast, however West Australian DXers still have no trouble with this region. One good signal noted was from Henny, who signs as SA-117 out of the Cape Town area. Henny uses a Cobra base station and a dipole antenna and was heard at 0735z working into Tasmania and South Australia.

I have been told that Jean-Claude, who signed as DC-155 out of the war-torn country of Mozambique, has been put off the air and will not be back on again. I understand all of his equipment has been seized by authorities.

DX from North Africa has been about but the signals have been very poor. One station to look for is Patrick, who signs as 66-AT-101 out of Mauritania on the north west coast and has been noted on longpath at 2150z with a barely readable signal. The Canary Islands have been heard with good signals at times although they tend to fade quickly both on the longpath and on the short. Beware of 34-AT-108 and 34-AT-113 if QSLing. Algeria, Morocco, Ceuta-Melilla and Egypt have been noted but have been too poor in signal strength to be useful. They have been heard from 1030z onwards, and at times earlier.

## MIDDLE EAST & ARABIA

Some excellent signals have been noted from this region from 0430z onwards until the close of the band. A good signal heard was from Abdullah, who signs as 102-WW-20 out of Kuwait. He was noted at 1241z with a solid five by seven peaking nine. Salaman, who signs as 102-AT-101 from Nuzha in Kuwait, has been active and was logged at 0612z with a reasonable five by five report but the signal was subject to heavy fading.

Dubai has been heard on the band and one of the most active stations would have to be 94-AB-101 who has been having a field day working into Europe. It's a pity that he doesn't swing his beam this way as there are still quite a few who need Dubai.

Lebanon, as always, is prevalent on the band with Marwan, who signs as 112-AT-108, being very active. Marwan was logged at 1141z with a steady signal of five by seven. Quite a number of the Lebanese-based Papa-Whiskey DX group have also been heard on the band making Lebanon easily accessible for DXers who still need this country.

The odd station has been logged from Turkey and 125-OP-002 was most noticeable around 1010z calling the Pacific Ocean regions but considerable interference from Western Europe knocked his signal around.

Hakim, who signs as 97-IR-002 out of Tel Aviv in Israel has stated that he is no longer QSLing with Australia due to poor returns. Hakim was heard at 1245z through to 1430z with a good five by seven report at times.

An interesting signal came from a station identifying itself only as "RADIO KILO X-RAY" an aeronautical mobile in Saudi Arabia. He created quite a pile-up of European stations wishing to work him at 1155z and was a good five by four to six at this end.

## EUROPE

Quite a frenzy of activity from this area has kept most DXers on the alert as signals from Eastern Block countries start to improve and become more noticeable on the band, however the ever-present interference from western and southern Europe has made monitoring these countries hard work but rewards are there for those who persist.

Poland has been noted on the band by way of Tomaz, who signs as 161-AT-128 out of Warsaw. He was heard at 1211z through to 1355z working into the United Kingdom and Scotland with a small but readable five by two at this end.

Moscow in the USSR has been noted on the band on numerous evenings by way of Alex, who signs as "ALPHA-ONE-ALPHA". Alex was heard at 1204z through to 1310z working western Europe pileups. QSL cards for Alex go via 1-AT-771, his QSL manager in Italy.

Despite increased activity from most of Europe, signals from Iceland and Greenland along with the Faroe Islands are still hard to find. It may be a case of trying on the longpath via the polar route and see what comes up.

The Azores Islands have been heard on numerous occasions both on the short and longpaths. Some noticeable signals belong to Jaime, who signs as Z-113 and David, who signs as 75-AT-107. Both speak good English and are keen to work Asia and the South Pacific to boost their country lists. Jaime was noted at 1305z on the shortpath and David was heard at 2320z on the longpath.

The Balearic Islands have been coming in quite well and by now most DXers will have this confirmed. Most of the stations noted were 49-AT prefixes.

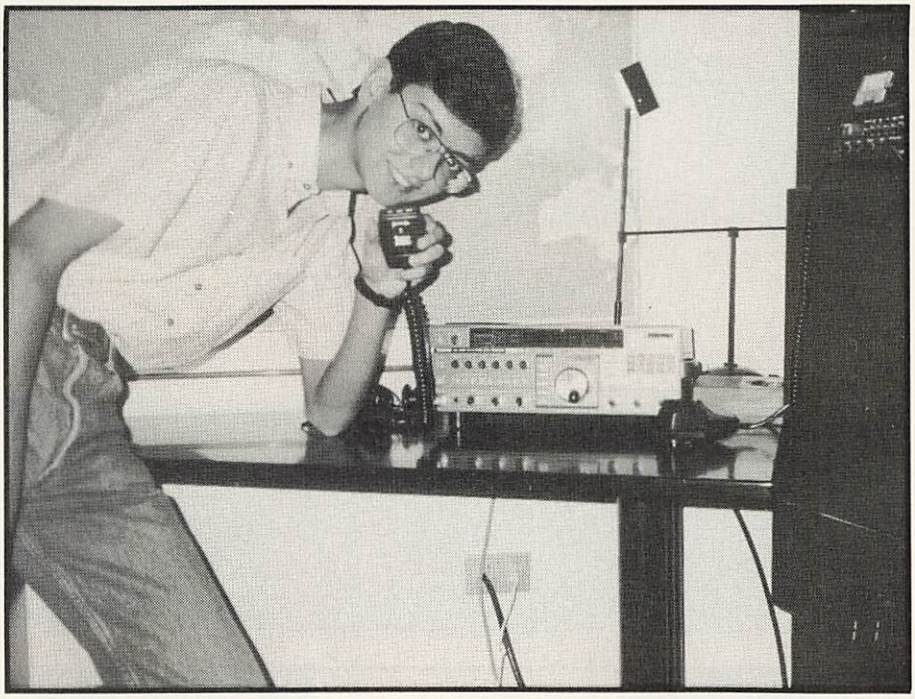
Not too far from the Balearic Islands is Gibraltar where a few stations have been noted both on the long and shortpaths. GIB-534, operated by Ernie, has been very active and was noted at 2255z via the longpath with a nice five by four peaking seven report, Ernie uses a Somerkampt S-780DX radio into a half-wave groundplane antenna and is most pleased with the results.

Signals from Scandinavia have been quite strong at times and Henning, who signs as 47-AT-112, was no exception. Henning was a steady 10/DB over nine peaking 20/DB around 1130z and the signal held for a good 30 minutes before fade got the better of it. Following close behind Henning was Sture, a popular DXer from Aland Island who signs as 212-AT-105. Although Sture's signal was only five by three peaking five by five his modulation was very solid and had no trouble penetrating the western Europe rabble.

The village idiot in Italy was noted calling from "Bulgaria" at 2355z, and was quickly denounced by other European stations. He immediately exited from the frequency after his cover was blown.

For those who still need Guernsey Island and Wales do not despair as there has been quite a bit of activity noted from these DXCC countries, usually when the rest of the United Kingdom is coming in. The Isle Of Man also has been heard by way of 137-AT-124 who was a good five by six at 2158z, another DXCC country that is popular with DXers.

A station with the brief callsign of "DELTA-ROMEO" was heard at 2344z transmitting from East Germany. His signal was quickly absorbed by the ever-persistent rabble from Italy and France and I failed to hear him again.



***Prominent Lebanese DXer, Marwan, the 112-AT-108 from Beirut, seen here in his shack.***

## CENTRAL/SOUTH AMERICA & THE CARIBBEAN

Signals from these areas have been rapidly increasing in recent weeks as the band conditions improve. Rodolfo, who signs as 69-AT-104 from Costa Rica, has been putting a mean signal into Australia and sometimes has pushed the meter up to 20/DB over nine around 2330z in the mornings.

Arnold, who signs as HP-1 CMY out of the Republic of Panama, also has been very active on the band using his amateur radio callsign. He was noted at 0514z with a good five by eight on the meter working into Australia and New Zealand.

San Andres Island has seen quite a lot of activity lately with David, who signs as 81-AT-103, being very active on the band around 0235z with a reasonable signal noted into eastern Australia and New Zealand. One to watch for is 81-AT-104 operated by Bassam. Seems this gentleman hasn't yet arranged his QSL portfolio for an unanswered QSL card followed by a back-up card six months later has, as yet not gained a reply. Better treat this fellow with a grain of salt, so to speak, when QSLing with this station.

Ramon, who signs as "357" out of the capital of Suriname, Paramaribo, has been fairly active on the band recently and was noted at 0600z with a good five by six report into Australia. Suriname is another of those countries one has to wach when QSLing, although things have improved slightly recently.

The islands that make up the West Indies have been very popular on the band, the Dominican Republic being the most evident with good strong signals. Luis, the 37-AT-105, was noted at 0422z with a good five by nine report. Luis is very keen to test his English while he is working the Pacific area and is quite a good operator too.

Puerto Rico, in the West Indies chain, has been popping up on the band with quite strong and stable signals. Eddie, who signs as the UNIT-95 out of Aguadilla in Puerto Rico, has been doing quite well into this region. Eddie uses a Ranger 3500-AR radio fed into a five-element beam antenna horizontally polarised. Eddie was a good five by six at 0444z.

Venezuela, Ecuador and Colombia have been setting the pace as far as the northern parts of South America are concerned. John, who signs as 5-SF-01 from Venezuela, was a solid five by nine report at 2020z and was matched constantly by numerous Alpha Tango members, also out of Venezuela.

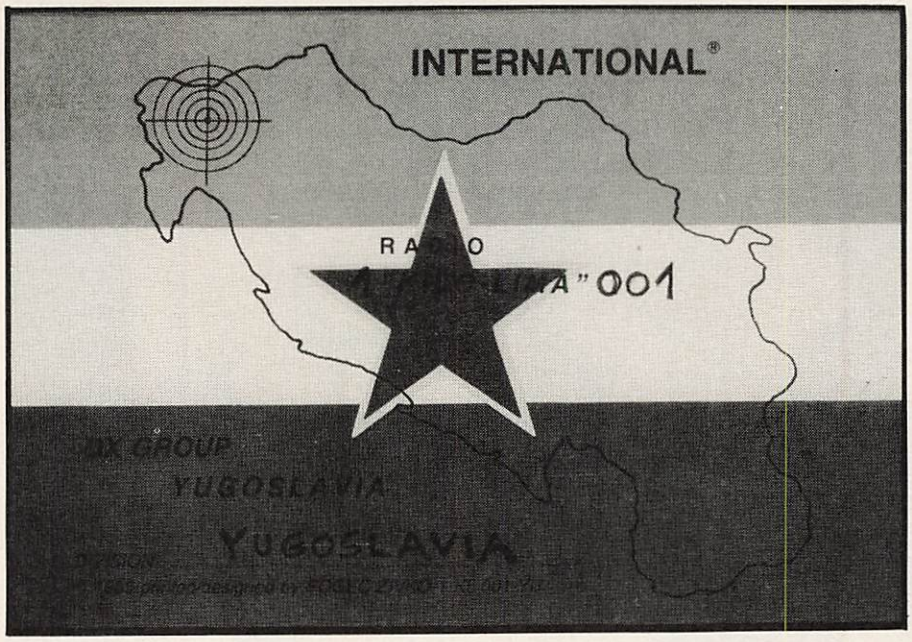
Eddie, the RADIO CALI-56 out of Colombia, was coming through quite well at 0347z with solid 10/DB over nine signal. Eddie uses a Cobra 148 GTL radio into an Astro Plane vertical antenna and seems to do very well for himself with this set-up. Eddie has a very interesting QSL card which features his local call "PREGONERO" which roughly translates into the town cryer.

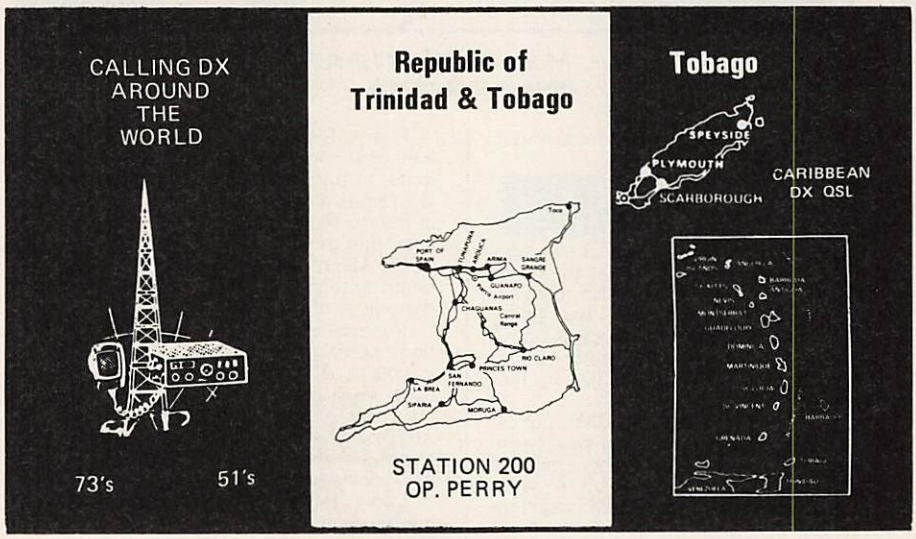
Argentina, Paraguay, Peru, Chile and French Guyana, along with the usual big signals from Brazil, are still about many using Alpha Tango prefixes and others the novelty calls. Beware when QSLing with stations using the novelty calls. South America is available anytime from daylight through to dusk into eastern Australia and signals are quite good and stable with not a great deal of fade lately.

## NORTH AMERICA

Conditions on the band to the US have been exceptionally good and it is quite possible that you could hear nearly all 50 states which make up this area in a couple of weeks, ideal if you are chasing a Worked All American States Award

**(continued over)**



**(continued)**

(WAS). Everything from the east to west coast has been available for the asking. Washington has been well represented by John, who signs as OLD TIMER-403. John was an enormous 20/DB over the nine here and that reading proves that his 12-element laser antenna is definitely doing the trick. He was noted at 2320z and it appears that John is well acquainted with Australia as he spent three months here in early 1988.

The 2-AT-301, operated by another John but this time Houston, Texas, was logged at 2345z and was pushing the needle well up to the 10/DB over nine mark. John uses a co-phased Skyduster groundplane antenna and gets extremely good results from this configuration.

A number of stations from Alaska have been noted on the band with quite good signals. Greg who signs as 1-KP-1, was complaining about ice building up on his antenna but judging by the five and eight report it didn't seem to have too much effect on it. Conditions remained good to Alaska right up to 0348z when I heard a lady signing as 33-WW-106 chasing Mike, the TA-31 in Papua New Guinea. Although I missed her name she was five by seven and then quickly faded out this way.

Plenty of activity has been noted from Mexico. Many Alpha Tango members were heard along with many novelty callsigns mainly in the Spanish language. Edgar, who signs as 10-AT-101, was one of the better signals heard around 0430z and was busy working into the Pacific region. Mexico can be heard from first thing in the morning until late in the afternoon. Beware of QSLing with Mexican stations using novelty callsigns as they have proved not too reliable in the past.

## ASIA & THE PACIFIC REGION

Many surprises have emerged from this region recently giving DXers the opportunity to pick up a new country along the way, a welcome change from the usual rabble that is associated with this area.

American Samoa has been heard on the band by way of Anthony, who signs as PINEAPPLE 995. Anthony is located in Pago Pago the capital of American Samoa, and can be heard when signals from French Polynesia are about. I should think there will be many people after this one.

After quite a long absence from the 11-metre band, Johnston Island is back with us again by courtesy of Mel, who signs as ONE MAN ARMY. Using a log periodic he ws noted at 0230z working into the Carib-

**TOP: Having 158 DXCC countries to his credit Zivko, 1-KL-001, is very popular on the 11-metre band from Yugoslavia. Zivko uses a Colt Excalibur 1200DX radio through a six-element yagi beam antenna.**

**CENTRE: Popular DXer Perry, who signs as KP-200 from the Caribbean island of Trinidad, has had success with his Cobra 148 GTL feeding 10 watts into his three-element beam.**

**BOTTOM: Interesting card from Ben, who signs as SP-12, Ben operates mobile using a Cobra radio with 20 watts into a whip antenna.**

bean. Mel is working as a civilian on the US Military Island of Johnston. At the moment it is not clear as to how long he will be active for.

Truk Island, in the Eastern Caroline Islands group which is part of Micronesia, has been very noticeable on the band with Mauime, who signs as KTIM-16 being quite popular. Mauime was logged at 0415z with a poor signal of only five by two. Shortly after I noted KO0231, also from Truk Island, on the band with a slightly better five by four signal report.

After a relaxing holiday back home in the UK, Mike, who signs as TA-31 from Madang in Papua New Guinea, is back on air and has been putting a very good signal into Australia. At 2355z, Mike was 10/B over the nine but was subject to severe fading at times. Mike has been having a ball working back into the mother country on DX at night (sure saves on phone calls, eh Mike?). Patrick, the 101-AT-101, out of Wabag in PNG, is conspicuous by his absence. I hope that Patrick hasn't been mixing too much with the headhunters in the district as they are known to QSL direct!

Christmas Island is still about by way of Dick, who signs 33-FE-077 or 217-AT-101. Dick is very popular with DXers who need this country although it takes some time for cards to come through as he QSLs via his US address. Being the only operator in Eastern Kiribati, Dick is a much sought after station at the moment.

At long last there is some activity worth mentioning out of Tonga and that comes by courtesy of Jerry, who signs as JX-109 maritime mobile. Jerry is currently in Vavau, in northern Tonga, for a few weeks before heading across to the Tongatapu group. Jerry is operating a Superstar radio off his 40 foot ketch through a nine-foot stainless steel whip mounted on the stern of the vessel. Jerry is usually active around the traps from 0100z onwards and unfortunately is not very interested in QSLing.

While on the subject of maritime mobiles, there is a French-speaking station operating M/M from Puka Puka, in the northern Cook Islands and as usual a reasonable command of the French language will be needed if you wish to secure this one. It is not clear how long this station will be at Puka Puka so it is a case of getting him while he is available. Activity from the Cook Islands in the past has been restricted to expatriate New Zealanders operating on the New Zealand CB system, mainly out of Rarotonga.

Activity from Wallis and Futuna Islands is still quite noticeable with Jean, who signs as LA-001, being very active on the band from Futuna Island. Jean was logged at 0502z with a good five by nine report. Again, you will need some basic French for this one.

Hawaii has increased dramatically in signal strength lately with John, who signs as UNIT-33 portable. Even at 0900z John was a solid 30/DB over nine and sometimes went to 40 plus DB over nine which raises the question, is that man really portable? Then again, some people have some strange definitions of portable operation!

A good signal which caught everyone by surprise came from a station calling itself "RADIO VIETNAM" at 0359z. The signal was a good five by six peaking nines on the meter. Despite receiving many calls the Radio Vietnam station didn't seem to respond to anyone. I tend to think that this one may be a slim, maybe our illustrious friend in Indonesia mentioned earlier.

Some big signals out of Japan have been testing the tolerances of the signal meter. Hiro, who signs as 25-AT-109, was a good 30/DB over the nine at 0350z. Hiro is located 100 kilometres northwest of Tokyo city. Hot on the heels of Hiro was Yoshi, who signs as IWA-5310 or JDW-400, and again he was a solid 30/DB over the nine but soon fell victim to constant fading. Yoshi is located in Sano, a city of 80,000 people 60 kilometres north of Tokyo.

Nepal is still about the band. After the much welcomed activity from Darrel, who was signing as 86-AT-101, follows Carl, who signs as WW-5108. Carl has been very active providing DXers with a much needed country and is about most evenings. Carl will cease operations in late April or May as he winds up his working activities there. Some stations have already received Carl's card, although the 86-AT-101 operation cards have yet to materialise. Also noted at 0850z was a station signing as 86-AA-001 from Nepal with a good five by five report. Despite many callers he didn't seem too interested which raises the question of whether he's another slim cashing in on the success of others?

## LONGPATH NOTES

There has been some excellent signals to Europe and North Africa via the longpath. From around 2100z through ot 0430z the following countries have been logged:

Azores Islands, Canary Islands, Spain, Portugal, Balearic Islands, Mauritania, Gibraltar, Ceuta-Melilla, along with Italy and France.

The longpath opening times tend to be erratic from day to day so it is a case of being about at the right time to reap the benefits. North and South America have also been noted on the longpath from around 1330z onwards with some reasonably good signals, of course at times these signals suffer interference from western Europe on the shortpath.

Argentina, Costa Rica, Venezuela, French Guyana, Suriname and Guatemala were noted.

## DX-PEDITION NEWS

On 15 and 16 April a DXpedition will take place on Jersey Island and will be signing as 167-AT-0 while active. The QSL arrangements at present are unknown.

Those lucky enough to have logged the Italian based group "SPERIMENTAL RADIO" DXpedition to Vatican City should have their cards by now. Signing as 138-SR-0 the event was most popular and gave many DXers a chance to pick up this rare one on 11 metres.

On 15 and 16 June there will be a DXpedition by the Alpha Tango group to the Republic of San Marino. Using multi operators they will be signing as 36-AT-0 and at present 1-AT-60, Giancarlo, and 1-AT-253, Fulvio, along with 1-AT-995, Emer, will be going. QSL arrangements will be announced on air.

Well, that's it for another few weeks. Until the next DX International, good luck with the improved conditions. Thanks to the following for their contributions: Roger the 43-AT-149 (Vic), Rob the 43-AT-110 (WA), Wayne the 43-WW-64 (NSW), Paul the 754 (NSW) and Jim the TI-322 (TAS).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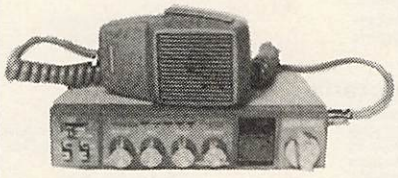

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# AUSTRALIAN UHF REPEATER LIST

| AREA | CHANNEL | LOCATION | SPONSOR |
|---|---|---|---|
| **New South Wales** | | | |
| Newcastle | 1/31 | Charleston | — |
| Ebor | 1/31 | Near Armidale | — |
| Wingham | 1/31 | Wingham | |
| Jindabyne | 1/31 | Corinya Alpine Centre | Marist Brothers |
| Sydney | 1/31 | Hurstville | Practronics |
| Corowa | 1/31 | Corowa | Corowa Electronics |
| Tamworth | 1/31 | Windworth | Landlink Communications |
| Harden | 1/31 | Mt Bobbara | — |
| Wagga | 1/31 | Riverina Communications | — |
| Wilcannia | 1/31 | Murtee Station | — |
| Inverell | 2/32 | Inverell | — |
| Sydney | 2/32 | Argent Communications | — |
| Canberra | 2/32 | Isaacs Ridge | Philips Communications |
| Parkes | 2/32 | Parkes | Bionics Australia |
| Narrabri | 2/32 | Castletop Mountain | Lance Hannaford Elect. |
| Walbundrie | 2/32 | Walbundrie | Corowa Electronics |
| Lismore | 2/32 | Raus | — |
| Murrundi | 3/33 | Liverpool Range | — |
| Sydney | 3/33 | Prospect | Philips Communications |
| Tenterfield | 3/33 | Mt McKenzie | Nathan Ross Electronics |
| Deniliquin | 3/33 | Deniliquin | Deniliquin Machinery |
| Tumbarumba | 3/33 | Mt Ikes | — |
| Armidale | 4/34 | Armidale | New England Mobile Comm's |
| Hay | 4/34 | Phil Shields Electronics | — |
| Broken Hill | 4/34 | Broken Hill UHF Club | — |
| Cooma | 4/34 | Blamac Communications | — |
| Sydney Outer-west | 4/34 | Riverlands Rpt Group | — |
| Goulburn | 4/34 | Mt Gray | Double Diamond |
| Albury | 4/34 | Lavington | Albury Communications |
| Muswellbrook | 4/34 | Mt Arthur | General Communications |
| Bega | 6/36 | Mumbulla Mountain | Athol McCoy Two-Way Radio |
| Casino | 6/36 | Mallanganee Range | Nathan Ross Electronics |
| Newcastle | 6/36 | New Lambton | General Communications |
| Coffs Harbour | 6/36 | Coffs Harbour | Country-wide Communications |
| Moree | 6/36 | Terry Hi-hi | Des Groth Radio-Electronics |
| Cowra | 7/37 | Bellview Hill | Harvey Electronic Service |
| Sydney | 7/37 | Chatswood | Philips Communications |
| Brendalilla Ranges | 7/37 | Outward Bound Aust. | — |
| Broken Hill | 7/37 | Broken Hill UHF Club | — |
| Bulahdelah | 7/37 | Cabbage Tree Mt | Great Lakes UHF Rpt Group |
| Wagga | 7/37 | Wagga | Riverina Communications |
| Glen Innes | 7/37 | Mt Rumbee | Glen Innes Amatuer Radio Club |
| Bathurst | 8/38 | Mt Panorama | Serv-U Appliance Centre |
| Stanthorpe | 8/38 | Amiemn | — |
| Sydney outer-west | 8/38 | Kurmond | Riverlands Rpt Group |
| Wollongong | 8/38 | Robertson | Phil Day |
| Walcha | 8/38 | Walcha | WALGRAZ— |
| Portable NSW | Various | NDP-826, GT Electrics | — |
| **ACT** | | | |
| Canberra | 2/32 | Isaacs Ridge | Philips-TMC |
| Canberra | 8/38 | Isaacs Ridge | Philips-TMC |
| **Victoria** | | | |
| Penshurst | 1/31 | Mt Rouse | Hamilton UHF Users Grp |
| Bairnsdale | 1/31 | Gippsland Rpt Assoc. | — |
| Melbourne | 1/31 | Omega Radio Club | — |
| Alexandra | 1/31 | Mt Eildon | Weeks Radio |
| Mansfield | 2/32 | The Paps | — |
| Moe | 2/32 | Moe | Gippsland Rpt Assoc. |
| Ballarat | 2/32 | Mt Buninyong | Central Highlands Rpt Assoc. |
| Lorne | 3/33 | Weeaproinah | — |
| Melbourne | 3/33 | Lysterfield | Philips Communications |
| Melbourne | 3/33 | W.I.A. (VIC Division) | — |
| Mildura | 3/33 | Ferguson Security & Sound | — |
| Yelta | 3/33 | Yelta | Nor-Co Sales & Service |
| Strathbogie Rngs | 3/33 | Mt Wombat | Goulburn-Murray Rpt Group |
| Bendigo | 4/34 | Specimen Hill | Central Vic. Rpt Assoc. |
| Geelong | 4/34 | Geelong Amateur Radio Club | — |
| Carrajung | 4/34 | Carrajung | Carrajung UHF CB Rpt Assoc. |
| Hawkesdale | 4/34 | Hawkesdale | — |
| Ballarat | 5/35 | Mt Warrenheip | Ballarat Rural Emergency Monitors |
| Hamilton | 5/35 | Mt Bainbridge | Hamilton Electronics |
| Melbourne | 5/35 | Olinda | Paravic Sports Assoc. |
| Foster | 6/36 | Mt Fatique | Gippsland Rpt Assoc. |
| Ararat | 6/36 | Mt William | Mt William UHF Rpt Committee |
| Wangaratta | 6/36 | Warby Ranges | Corowa Electronics |
| Gippsland | 7/37 | Mt Taylor | Gippsland Rpt Assoc. |
| Shepparton | 7/37 | Shepparton | Angus Communications |
| Ballarat | 7/37 | Ballarat Communications | — |
| Melbourne | 7/37 | Frankston | Powerband Communications |
| Myrtleford | 8/38 | The Alpine Rpt Group | — |
| Cavendish | 8/38 | Mt Dundas | Hamilton UHF Users Grp |
| Bendigo | 8/38 | Mt Alexander | — |
| Portable Vic. | Various | State-wide | Omega Radio Club |
| **Queensland** | | | |
| Bundaberg | 1/31 | Mt Perry | Bundaberg HI-Fi Stereo |
| Mt Isa | 1/31 | Lake Julius | Qld Education Dept. |
| Brisbane | 1/31 | Mt Cotton | Philips Communications |
| Rockhampton | 1/31 | Mt Archer | Capricornia UHF Rpt Assoc. |
| Atherton-Mareeba | 1/31 | Rocky Creek | Marteens Electrtonics |
| Mt Stewart | 1/31 | Mt Stewart | Olbis Industries |
| Roma | 1/31 | Roma Teleradio | — |
| Middlemount | 1/31 | Middlemount S.E.S. | — |
| Leichhardt | 1/31 | Mt Hope | Driscoll Pastoral |
| Clermont | 1/31 | Clermont | — |
| Gunalda | 2/32 | Mt Kanigan | Ralph Hill Electrical |
| Taroom | 2/32 | Mt Kinnoul | Taroom Rpt Assoc. |
| Toowoomba | 2/32 | Picnic Point | Custom Scientific Electronic |
| Marlborough | 2/32 | Broadsound Range | Marlborough UHF Rpt Assoc. |
| Quilpie | 2/32 | Trinidad Station | D.E.A. Pegler & Co. |
| Ingham | 2/32 | Mt Cudmore | R.E. Pugh |
| Mackay | 3/33 | Farleigh | Mackay Citizens' Rpt Group |
| Monto | 3/33 | Pine Mountain | Monto UHF Rpt Committee |
| Tin Can Bay | 3/33 | Double Island Point | Tin Can Bay Lions Club |
| Springsure | 3/33 | Rodda Lookout | Bauhina S.E.S. |
| Cairns | 3/33 | Mt Yarrabah | GCG Communications |
| Bajool | 4/34 | Mt Hopeful | Mt Hopeful UHF Rpt Assoc. |
| Dalby | 4/34 | Mt Mowbullan | G.T. Communications |
| Ipswich | 4/34 | Ipswich Repeater Org. | — |
| Bundaberg | 4/34 | The Sloping Hummock | Bundaberg Hi-Fi Stereo |
| Goondiwindi | 4/34 | Goondiwindi | Border TV & Radio |
| Gold Coast | 4/34 | Coolangatta | Philips Communications |
| Brisbane | 5/35 | Mt Glorious | ACRM (Qld) |
| Caloundra | 6/36 | Bald Knob | Ralph Hill Electrical |
| Gladstone | 6/36 | Mt Larcom | Nixon Controls |
| Palm Island | 6/36 | Palm Island | Palm Island Council |
| Blackdown | 6/36 | Blackdown Tableland | Blackdown UHF Rpt Assoc. |
| Burnett Ranges | 6/36 | Mundubbera | Custom Scientific Electrical |
| Yaraka | 7/37 | Mt Slowcombe | Yaraka Rpt Assoc. |
| Brisbane | 7/37 | Toohey Mountain | Olbis Industries |
| Clermont | 7/37 | Clermont S.E.S. | — |
| Murgon | 7/37 | Mt England | Murgon Rpt Assoc. |
| Mt Alexandra | 8/38 | Mt Alexandra | Bill Jones Comms |
| Biloela | 7/37 | Mt Bertha | Biloela Rpt Assoc. |
| Stanthorpe | 8/38 | Amiens | Mt Peanga Rpt Assoc. |
| Chinchilla | 3/33 | Mt Peanga | Mt Peanga Rpt Assoc. |
| Emerald | 8/38 | Emerald | Emerald District Rpt Asc. |
| Pialba | 8/38 | Ghost Hill | Maryborough Sugar Factory |
| Milaa Milaa | 8/38 | Milaa Milaa | Bill Jones Comms |
| **South Australia/Northern Territory** | | | |
| Adelaide | 1/31 | Summerton | Philips Communications |
| Carrieton | 1/31 | Price Hill | — |
| Darwin | 1/31 | Darwin | Seascan Communications |
| Black Rock Peak | 2/32 | Black Rock Peak | Toops Electrical |
| Cleve | 2/32 | Mt Nield | Cleve Rpt Assoc. |
| Myponga | 2/32 | Myponga Hill | Volunteer Coast Guard |
| Adelaide | 3/33 | Trott Park | Philips Communications |
| Blinman | 3/33 | Patawarta Hill | — |
| Barossa Valley | 4/34 | Barossa District Rpt Grp. | — |
| Kangaroo Island | 4/34 | Parndana | Kangaroo Island Rpt Assoc. |
| Snowtown | 4/34 | Snowtown | — |
| Naracoorte | 4/34 | Lucindale | Naracoorte UHF Rpt Assoc. |
| Adelaide | 5/35 | Hawthendorne | ACRM (SA) |
| Renmark | 6/36 | Renmark | — |
| Whyalla | 6/36 | The Bluff | Mt Remarkable Council |
| Clare | 7/37 | Quarry Hill | Mid-North Rpt Assoc. |
| Mt Gambier | 7/37 | The Bluff | South-east UHF Rpt Assoc. |
| Mt Bryan | 8/38 | Mt Bryan | Mt Bryan Rpt Assoc. |
| Port Lincoln | 8/38 | Tumby Bay | Sth Eyre Peninsula Rpt Assoc. |
| Portable SA | Various | State-wide | ACRM (SA) |
| **West Australia** | | | |
| Denmark | 1/31 | Denmark | — |
| Kellerberrin | 1/31 | Kellerberrin | Central Wheatbelt Rpt Group |
| Kambalda | 1/31 | Kambalda | Goldfields Rpt Assoc. |
| Meekatharra | 1/31 | Hill View Station | — |
| Perth | 1/31 | Wanneroo | Philips Communications |
| Wickham | 1/31 | Wickham | Wickham Radio Club |
| Bencubin | 2/32 | Bencubbin | — |
| Bunbury | 2/32 | Shenton Ridge | Bunbury & District UHF Repeater Group |
| Albany | 3/33 | Mt Melville | — |
| Perth | 3/33 | Roleystone | Philips Communications |
| Boyup Brook | 4/34 | Dinninup | Boyup Brook Farm Comm's Group |
| Esperance | 4/34 | Esperance | — |
| Kulin | 4/34 | Kulin | — |
| Lancelin | 4/34 | Lake Karakin | Gingin Shire Council |
| Perth | 5/35 | Maddington | CREST (WA) |
| Margaret River | 6/36 | Ellen Brook | Margaret River UHF Repeater |
| Mt Marypeaks | 6/36 | Mt Marypeaks | Group — |
| Wyalkatchem | 6/36 | Wyalkatchem | D. & G. Pearce |
| Mt Barker | 7/37 | Mt Barker | Plantagenet Rpt Group |
| York | 7/37 | Mt Bakewell | York Rpt Group |
| Coolgardie | 7/37 | Mt Burgess | — |
| Manjimup | 8/38 | Manjimup Comm Radio Service— | — |
| Ravensthorpe | 8/38 | — | — |
| Portable WA | 8/38 | WA-wide | Gary, WAX-723 |
| **Tasmania** | | | |
| Devonport | 1/31 | Roland | Rick Rickard, TAJ-652 |
| Hobart | 1/31 | Grass Tree Hill | Southern Tas. Rpt Assoc. |
| Launceston | 2/32 | Mt Arthur | Launceston Rpt Assoc. |
| Devenport | 3/33 | Railton | Rick Rickard, TAJ-652 |
| North-East Coast | 3/33 | Tower Hill | North-East Rpt Assoc. |
| Tasmanian Midlands | 4/34 | Millers Bluff | Midlands Rpt Group |
| Hobart | 5/35 | Mt Faulkner | CREST (Tas.) |
| East Coast | 6/36 | Mt Toombs | East Coast Rpt Assoc. |
| West Coast | 6/36 | St Valentines Peak | North-West Coast Rpt Assoc. |
| Central Highlands | 7/37 | Barren Tier | Central Highlands Assoc. |
| Burnie | 8/38 | Round Hill | North-West Coast Rpt Assoc. |
| Hobart | 8/38 | Mt Nelson | Harts Pty Ltd |
| Portable Tas | Various | Tasmania-wide | Rick Rickard, TAJ-652 |

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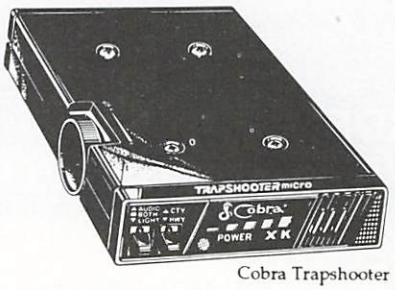


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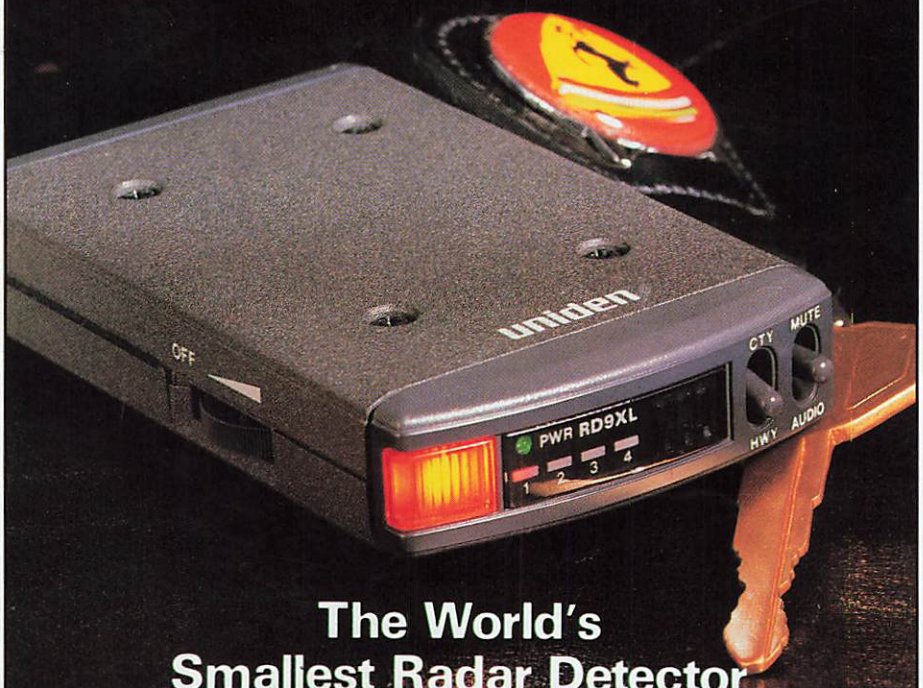


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